

**Before the  
Federal Communications Commission  
Washington, D.C.**

**In the matter of:**

<b>Revitalization of the AM Radio Service</b>	<b>)</b>	
	<b>)</b>	<b>MB Docket No. 13-249</b>
<b>Further Notice of Proposed Rulemaking</b>	<b>)</b>	<b>FCC 15-142</b>
	<b>)</b>	

**COMMENTS OF DU TREIL, LUNDIN & RACKLEY, INC.**

The engineering consulting firm of du Treil, Lundin & Rackley, Inc. (“dLR”) hereby submits these comments in response to the Commission’s Further Notice of Proposed Rulemaking that was issued as item IV of the First Report and Order in the above-captioned proceeding on October 23, 2015. In that Further Notice, the Commission solicited comments on its various specific proposals that are listed topically herein.

We have reviewed the Further Notice and we strongly support the Commission’s goal of revitalizing the AM radio service. Based on experience from the 75 year history of providing engineering consulting services to the licensees of AM radio stations of our firm and its direct predecessors, we intend with these comments to provide focused analysis of the Commission’s specific proposals related to AM transmission standards and other matters related to licensing of AM stations which we believe to be very important for AM revitalization.

We believe that the present matters need to be considered on a solid foundation of engineering facts. We intend to base our comments on such facts. Decisions need to be made based on facts, rather than uninformed speculation or wishes that things were other than the way they are. A “big picture” focus is needed, with what is best for the public and the AM radio service in view rather than a myopic look at what is best for special interests.

Except where noted herein, we agree with all of the rule changes that are specifically proposed by the FCC in the Further Notice for the reasons that were provided in our previous

Comments<sup>1</sup> and Reply Comments<sup>2</sup> in this proceeding, which we include by reference. Additional information that we believe may have decisional significance is presented in these comments, also.

### **General Comments about Noise and Interference - and the Need for New Rules**

Almost 30 years ago, a study of the effects of interference on service in the AM band was sponsored and published by the National Association of Broadcasters.<sup>3</sup> A survey was conducted over a statistical sample of people that asked the following question:

*What do you feel are the major problems with the sound quality of the AM radio signal?*

The responses were as follows:

Weather Interference	69%
Hiss/background noise	37%
Weak signal	20%
Static	19%
Frequency Response	13%
Fading	9%
Unspecified interference	8%
Station crowding	7%

Of the eight categories cited in the study, the top six clearly have nothing to do with interference that AM stations cause to each other. We believe that this report provides important information on the difficult situation in which AM broadcasters find themselves trying to provide competitive service today.

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<sup>1</sup> "Comments of du Treil, Lundin & Rackley, Inc., MB Docket No. 13-249," January 13, 2014.

<sup>2</sup> "Reply Comments of du Treil, Lundin & Rackley, Inc., MB Docket No. 13-249," March 4, 2014.

<sup>3</sup> B. Angell & Associates, Inc. "AM Radio Interference Study," June, 1988.

The present FCC requirements for protection from inter-station interference in the AM band are based on assumptions about the signal strength levels required for acceptable service dating back approximately eighty years. Much has changed in those eighty years. Based on research done in Canada in the mid-1980s, much had changed by then. The Canadian Department of Communications (“DOC”) submitted the results of the research to the International Radio Consultative Committee (“CCIR”), the technical advisory branch of the International Telecommunications Union (“ITU”).<sup>4</sup> According to the DOC report:

*Detailed field strength measurements carried out to assess the quality of the service of some Canadian AM stations in urban and rural areas have shown an increase in EM noise. Forty years ago, a field strength of 5 mV/m (74 dBu) was considered adequate for urban coverage. Today, 30 mV/m (89.5 dBu) is considered a barely minimum value to cover densely populated metropolitan areas with noise-free reception. These higher levels of EM noise in larger metropolitan areas need also to be considered in the planning process.*

Both the NAB and DOC reports underscore that a wrong turn was taken approximately 25 years ago when rules were enacted with a focus on strategies to reduce “on paper” interference between stations rather than how they might improve their ability to overcome noise and interference with better transmitted signals. It was a misguided attempt to legislate an AM radio Utopia by pretending to “outlaw” interference between stations that would remain in operation, with speculation that new receiver technology would come along to overcome the ills of AM radio that the past quarter century has shown to have been unrealistic.

We very much approve of the FCC’s abolishing the “Ratchet Rule,” which flowed from an anti-interference, rather than pro-service, mentality the last time comprehensive revision of the FCC rules related to AM broadcasting was undertaken. Now, as the Report and Order noted, it is time to roll back other changes in the rules that were made at the same time which have hampered radio station signal improvements ever since. It is also time to adopt changes to the definitions of protected and interfering contour levels to realistically reflect the present day situation with regard to noise and man-made interference.

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<sup>4</sup> “Minimum Usable Field Strength of AM Sound Broadcasting Reference Receivers (MF Band) for Planning Purposes,” CCIR Document 10/316-E submitted by the Canadian DOC as a proposed

## FCC Proposal A. – Modify AM Protection Standards

### 1. Change Nighttime and Critical Hours Protection to Class A AM Stations

Class A stations have historically provided coverage to larger areas than other classes of station. According to 47 CFR 73.21(a)(1), a Class A station is to provide "...service over an extended area and at relatively long distances from its transmitter..." We believe that any new allocation standards that are adopted should preserve this coverage objective for Class A stations. As a matter of service to the public, they should be able to continue to provide wider area coverage than other stations as adjustments to the rules in recognition of present day noise and interference levels are made.

We do not support the standard for nighttime protection of Class A stations that has been proposed by the FCC. The proposed change could result in excessive nighttime skywave interference within the coverage areas of Class A stations and severely restrict their ability to provide service to their listeners. See Attachment 1.

We do believe in the concept of allowing Class A stations that employ directional antennas at night, as well as other classes of station, to optimize nighttime groundwave service without the obsolete restrictions of the present rules. As an alternative to the FCC's plan, we propose that Class A stations be normally protected to their nighttime 0.5 mV/m groundwave contours in a similar fashion to how Class B stations are normally protected to their 2.0 mV/m contours at night. Other stations making changes will have to show that they do not increase interference above 0.5 mV/m, or the 50% exclusion RSS interference free level, if higher, of any Class A station. This will recognize the large areas of groundwave service that have been historically provided by Class A stations and preserve them fairly, based on the actual interference situation at night. See Attachments 2 and 3.

It is obvious from Attachment 2 that the presumed 0.5 mV/m 50% of time skywave service of Class A stations is a myth that results in unjustified restrictions on other stations wishing to provide service to their local areas. The myth has been perpetuated because of the way Class A stations have existed in a regulatory "bubble" for the last 80 years, as far as allocation matters are concerned, with no consideration given to actual interference because

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amendment to Annex I of Recommendation AB/10.

protection has been calculated to an assumed contour level instead. 0.5 mV/m 50% of time skywave interference-free coverage areas simply do not exist on Class A channels. Calculations show that Class A stations in the United States have nighttime interference free levels, when calculated on a site-to-site basis using the standards that have been proposed by the FCC in this proceeding, that average 1.5 mV/m. We believe that our proposal to provide nighttime protection to Class A station groundwave service at the 0.5 mV/m threshold will represent fair protection for the stations that have interference-free coverage near that level. We also note that, in most cases, the 50% RSS will be below the 2.0 mV/m normally protected value for Class B stations.

There are a number of examples among the ranks of Class A stations where one domestic Class A station's 0.025 mV/m, 10% of time, skywave contour overlaps the 0.5 mV/m, 50% of time, skywave contour of another Class A station. See Attachment 4. The benefits to the public of this overlap, which is not allowed to be created new by stations making changes under the present rules, are obvious from the information provided in Attachment 5. Over 700,000 people receive good quality 2.0 mV/m groundwave coverage in and near the local markets of the studied stations because their nighttime signals are not restricted to avoid overlap with other Class A stations' skywave coverage areas. Our proposal will make it possible for Class A stations that employ directional antennas to protect other Class A stations at night to make improvements that result in greatly increased groundwave coverage of their local markets, as can be deduced from the cited examples. Additionally, other classes of station will be able to add new nighttime service or significantly improve groundwave coverage of their local markets at night. This increased nationwide groundwave coverage will be possible once the requirement to avoid overlap within assumed, but nonexistent, Class A station skywave interference-free coverage areas is eliminated from the rules.

We do not support the FCC proposal to eliminate critical hours protection of Class A stations. If it becomes possible for other classes of station to increase daytime power with the proposed rules, we believe that there will be the potential for harm within the daytime coverage areas of Class A stations without any limitation on critical hours radiation toward them. We believe that the present requirement for 0.1 mV/m daytime contour protection during critical hours is unnecessarily restrictive, given present day noise and man-made interference levels. We believe that critical hours protection should be provided to the 0.5 mV/m groundwave contours of Class A stations. We recommend that the protection be calculated on a site-to-site basis, as we believe should be the case for all protection requirements involving skywave propagation.

Attachment 6 includes a table of interpolation factors scaled from those that are presently given in 47 CFR 73.187(c) for critical hours protection at the 0.5 mV/m level.

## **2. Change Nighttime RSS Calculation Methodology**

We support the FCC's proposal to return to pre-1991 methods of evaluating nighttime interference by returning to the use of 50% RSS calculations including co-channel contributions only. Further, we believe that the FCC should adopt site-to-site calculations for nighttime skywave interference analysis.

Nighttime skywave interference calculations are based on analysis of signal levels where an incoming signal will become perceptible 10% of the time in the background of a desired signal, as Ionospheric conditions fluctuate - within a range of vertical angles from a transmitting antenna that is assumed to account for varying virtual height of the reflecting layer. We believe that, given the statistical uncertainties of such calculations and the extreme conservatism of the 10% of time assumption [most of the rest of the World uses 50% of time assumptions for skywave interference calculations], it makes no sense to draw any distinction between the skywave signal level at a transmitter site and around the periphery of the corresponding groundwave contour. Site-to-site calculations will simplify and reduce the cost of engineering for stations making improvements and be administratively convenient for the FCC application processing staff.

It has been FCC policy for many years to study applications on a site-to-site basis for nighttime protection and consider contour periphery calculations (aka "clipping studies") only when applications are contested. When proposals are contested, it can be cumbersome for both applicants and the FCC because the calculations can go to multiple levels: groundwave contours assumed to have the same interference free level as is calculated at the site, groundwave contour points having their individual RSS calculations and whatever groundwave contour approach is used being based on M-3 or measured ground conductivity. It makes a mess for everyone involved, both within and outside the FCC, when that happens - we think for no good reason.

We believe that any potential for noticeable interference that exists for AM stations with site-to-site nighttime studies is less significant than what is the case for FM stations with spacing-based channel assignments that do not take into account actual terrain between stations. In

principle, both are examples of things that can be considered below the line that is drawn to separate the things that need to be worried about from the things that do not. “Clipping studies” should be below that line. We believe that the convenience of being able to do definitive nighttime allocation studies based on readily computed site-to-site assumptions far outweighs any small advantage in interference protection that more complicated groundwave contour analysis might provide. It will reduce the cost to station licensees of engineering for construction permit applications if site-to-site skywave protection is adopted in the rules. It will streamline the processing of AM station improvement applications. FCC staff resources will be used more efficiently with site-to-site skywave analysis, also.

### **3. Change Daytime Protection to Class B, C and D Stations**

We support the FCC’s proposed daytime protection standards with one exception. We believe that the Class A daytime protected contour level should be 0.5 mV/m. Protection to the 0.1 mV/m level is a relic of long ago and, although it may be possible to hear signals that low in field strength in some places some of the time, present day noise and man-made interference levels do not support considering 0.1 mV/m as defining service. If the 0.5 mV/m contour is defined as the service contour that requires protection for Class A stations, the concept of Class A stations providing service over wider areas than other classes of station will be preserved with 2.0 mV/m being their service standard.

### **FCC Proposal B – Revise Rule on Siting of FM Cross-Service Fill-In Translators**

We agree with the FCC’s proposal to allow fill-in FM translators to be located to provide 1 mV/m service within the greater of the 2 mV/m daytime contour of the AM station or, alternately, a 25 mile radius centered on the AM transmitter site. This will give needed flexibility for dealing with the complicated coverage areas that AM stations sometimes have due to directional antenna pattern shapes and/or uneven ground conductivity surrounding their transmitter sites. We do not believe that the requirement that 1 mV/m FM translator coverage may not extend to greater than a 40 mile radius of the AM transmitter site is necessary or desirable. There are cases where directional antenna pattern shapes and/or ground conductivity result in AM service to areas that would be restricted from receiving FM translator service if this were a requirement.

## **FCC Proposal C – Modify Partial Proof of Performance Rules**

We agree with the FCC's proposed modification of 47 CFR 73.154(a)

## **FCC Proposal D – Modify Rules for Method of Moments Proofs**

We believe that the requirement for recertification measurements should be completely eliminated. Our experience is that they are unnecessary and result in taking apart and reconnecting sampling system components that would best be left alone. If any shift of parameters is noted, the very thorough internal system measurements required initially with a Method of Moments proof can be used for troubleshooting and restoring the antenna system to its initial condition.

We believe that the requirement for reference field strength measurements should be eliminated both for Method of Moments proofs and recertification. In our experience they are not useful. Method of Moments proofs have ushered in a new era of being able to maintain AM directional antenna systems using internal system measurements that is far superior to the former methods based on field strength measurements.

We believe that the requirement for surveying existing directional antenna arrays should be eliminated as long as tower geometry is not being modified and no new towers are being added to the array.

We believe that 47 CFR 73.151(c)(1)(viii) should only apply when the total capacitance used to model base region effects exceeds 250 pF and should only apply when base current sampling is used.

We believe that it should be possible to proof arrays having skirt fed towers using Method of Moments modeling if the skirt has a large enough number of wires, spaced far enough from the tower structure, to provide a sufficient level of shielding of the tower. This would make it possible to model such antennas without significant interference between the far field contribution from current flowing in the tower structure to that from the wires of the skirt, which produce the far field radiation of the antenna element, allowing analysis of a skirt fed tower in a directional antenna system on the currents flowing in the skirt wires in similar fashion to the way

simple tower currents are analyzed for a Method of Moments proof of performance. We do not believe that, at this point, there is a sufficient body of experience to specify what standards should be used for such analysis, however. We believe that the subject of using skirt fed towers in Method of Moments proofed directional antenna patterns should be considered in a further proceeding, initiated without delay.

We believe that the rules should state that re-proofing should not be required for stations that are licensed with Method of Moments proofs if re-measurement of the base impedance of a tower that has had a change made on it finds it to be within the required tolerance of the proof modeled value.

We believe that current distribution measurements should not be required for antennas when Method of Moments analysis is used to determine their characteristics.

#### **FCC Proposal E – Require Surrender of Licenses by Dual Expanded Band / Standard Band Licensees**

Because of the passage of a long period of time since the selections were made for stations to migrate to the expanded band, the question of whether the goal of interference reduction would still be served by surrendering each license may be complicated. For one thing, the interference upon which the decision was initially made to award an expanded band channel may have ceased to exist due to subsequent changes in station assignments in the AM band. For another, the proposed new allocation-related rules may eliminate the interference. In some cases, removing the standard band station will no longer be necessary for interference reduction. If interference is only at night, converting to daytime only operation will eliminate it. In the interest of maintaining as many local radio services as possible, the FCC should allow standard band stations in standard-expanded band pairs to remain on the air if the originally-considered interference no longer exists under the allocation rules that are adopted in this proceeding. Stations that only have interference issues at night should be allowed to convert to daytime-only operation, if necessary for interference reduction.

We urge the FCC to not let resolution of what to do about surrendering licenses stand in the way of allowing new applications to be filed, however. New rules should be adopted

specifying exactly the same allocation standards for expanded band stations as apply to standard band stations upon which new expanded band assignments may be based without delay.

## Conclusion

We believe that AM radio stations can be relied upon to provide needed service well into the future, but a new direction in regulation of factors that impact their signal transmission quality is needed to provide them with the flexibility they will need to compete with the ever increasing number of alternative audio programming delivery systems they face today and in the future. The needed rule changes should be made with a pro-service objective and should avoid Utopian assumptions about what can be accomplished through regulation – such as attempting to eliminate interference simply by “outlawing” it, which can accomplish nothing as long as the stations involved remain in operation. A pro-service approach would make it possible for AM stations to make changes that overcome interference and provide better coverage to their actual audiences.

Respectfully Submitted,

March 21, 2016

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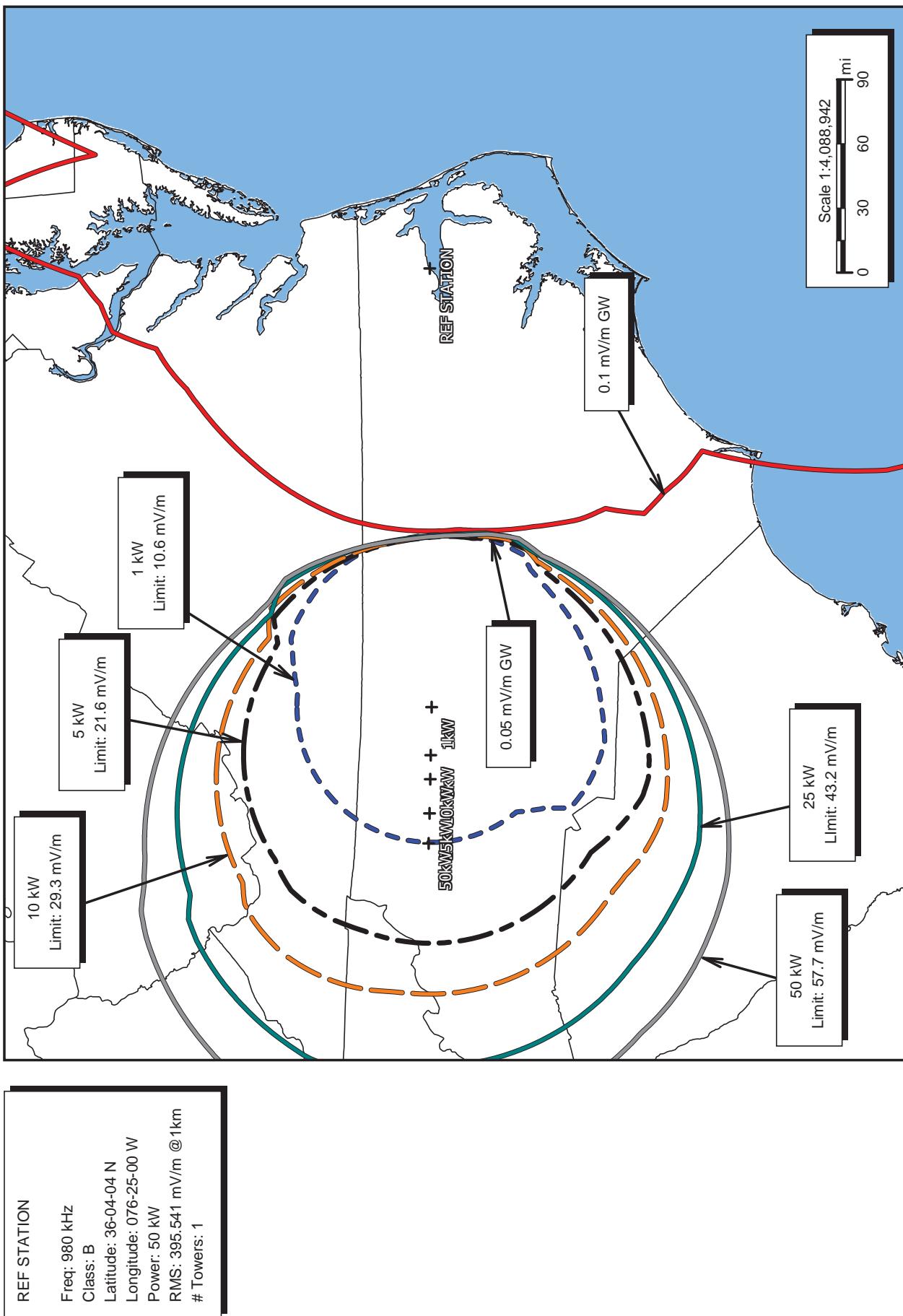


Ronald D. Rackley, P.E.

## **ATTACHMENT 1**

The degree of nighttime interference protection that would be provided for Class A stations has been studied for one hypothetical case using the rule changes proposed in the Further Notice of Proposed Rulemaking. A 50 kW nondirectional station, operating on a frequency near mid-band, was posited at arbitrarily chosen coordinates. Calculations of the 10% of the time nighttime interference limits that would be produced at its site by five different nondirectional stations, each providing 0.1 mV/m groundwave protection from 0.005 mV/m overlap, were calculated. The groundwave calculations were based on M-3 conductivity. The results appear on the following map.

The protection of the 0.5 mV/m 50% of the time skywave contour of the present rules would change to site-to-site nighttime interference limits ranging from 10.6 mV/m to 57.7 mV/m under the five scenarios for which calculations were made.



## **ATTACHMENT 2**

The nighttime interference free (“NIF”) levels of all domestic Class A stations, calculated according to the proposed standards that consider co-channel contributions only and use 50-percent RSS exclusion, appear on the following tabulation. The calculations were done on a site-to-site basis and show the average NIF of all stations to be 1.50 mV/m.

CLASS A STATIONS - 48 STATES			
Freq(kHz)	Callsign	City of License	NIF(mV/m)
640	KFI	Los Angeles, CA	2.05
650	WSM	Nashville, TN	1.78
660	WFAN	New York, NY	1.53
670	WSCR	Chicago, IL	0.82
680	KNBR	San Francisco, CA	0.69
700	WLW	Cincinnati, OH	1.62
710	KIRO	Seattle, WA	0.60
710	WOR	New York, NY	0.88
720	WGN	Chicago, IL	1.94
750	WSB	Atlanta, GA	2.19
760	WJR	Detroit, MI	1.92
770	WABC	New York, NY	1.51
780	WBBM	Chicago, IL	1.31
810	KGO	San Francisco, CA	1.32
810	WGY	Schenectady, NY	1.37
820	WBAP	Fort Worth, TX	2.01
830	WCCO	Minneapolis, MN	1.28
840	WHAS	Louisville, KY	1.47
850	KOA	Denver, CO	1.97
870	WWL	New Orleans, LA	3.16
880	WCBS	New York, NY	2.65
890	WLS	Chicago, IL	0.98
1000	KOMO	Seattle, WA	0.99
1000	WMVP	Chicago, IL	2.11
1020	KDKA	Pittsburgh, PA	2.03
1030	WBZ	Boston, MA	1.62
1040	WHO	Des Moines, IA	1.77
1060	KYW	Philadelphia, PA	3.05
1070	KNX	Los Angeles, CA	0.79
1080	WTIC	Hartford, CT	2.18
1080	KRLD	Dallas, TX	2.87
1090	KAAY	Little Rock, AK	1.66
1090	WBAL	Baltimore, MD	1.59
1100	WTAM	Cleveland, OH	2.58
1110	KFAB	Omaha, NE	1.73
1110	WBT	Charlotte, NC	3.15
1120	KMOX	St. Louis, MO	1.77
1130	KWKH	Shreveport, LA	2.64
1130	WBBR	New York, NY	2.62
1140	WRVA	Richmond, VA	2.91

CLASS A STATIONS - 48 STATES(Cont.)			
Freq(kHz)	Callsign	City of License	NIF(mV/m)
1160	KSL	Salt Lake City, UT	0.82
1170	KFAQ	Tulsa, OK	2.15
1170	WWVA	Wheeling, WV	2.10
1180	WHAM	Rochester, NY	2.14
1190	KEX	Portland, OR	1.31
1200	WOAI	San Antonio, TX	2.63
1210	WPHT	Philadelphia, PA	1.97
1500	KSTP	St. Paul, MN	1.43
1500	WFED	Washington DC	1.68
1510	WLAC	Nashville, TN	1.06
1520	KOKC	Oklahoma City, OK	1.55
1520	WWKB	Buffalo, NY	0.89
1530	KFBK	Sacramento, CA	0.51
1530	WCKY	Cincinnati, OH	1.38
1540	KXEL	Waterloo, IA	1.15
1560	KNZR	Bakersfield, CA	0.88
1560	WFME	New York, NY	1.06
<b>AVERAGE 48 STATES:</b>			<b>1.72</b>

CLASS A STATIONS - ALASKA			
Freq(kHz)	Callsign	City of License	NIF(mV/m)
640	KYUK	Bethel	0.69
650	KENI	Anchorage	0.84
660	KFAR	Fairbanks	0.77
670	KDLG	Dillingham	0.72
680	KBRW	Barrow	0.47
700	KBYR	Anchorage	0.59
720	KOTZ	Kotzebue	0.49
750	KFQD	Anchorage	1.01
770	KCHU	Valdez	1.34
780	KNOM	Nome	0.51
820	KCBF	Fairbanks	0.37
850	KICY	Nome	0.48
890	KBBI	Homer	0.87
1020	KVNT	Eagle River	0.78
1080	KOAN	Anchorage	1.21
1170	KJNP	North Pole	0.78
<b>AVERAGE ALASKA:</b>			<b>0.75</b>
<b>AVERAGE ALL:</b>			<b>1.50</b>

## **ATTACHMENT 3**

The following pages show the details of the nighttime interference free (“NIF”) RSS calculations for all domestic Class A stations. The calculations were done on a site-to-site basis according to the allocation standards that have been proposed by the FCC in this docket, considering co-channel contributions only and using 50-percent RSS exclusion. The propagation model prescribed in the FCC rules for all station classes was used for the calculations.

In keeping with standard FCC practice, foreign stations considered to be contributors were limited to those appearing on List A and List C – with the exception of all stations in Cuba being eliminated because of the unstable status with regard to Cuban notifications. It is known that there are many stations operating in Cuba with other than officially notified facilities and that some domestic Class A stations receive interference far above the calculated levels appearing herein. Since coordination between the United States and Cuba to eliminate AM band conflicts may someday be possible, no decisional significance is being attributed to Cuban interference contributions in this present context.

## Station Information:

Call: KFI  
 Freq: 640 kHz  
 LOS ANGELES, CA, US  
 Hours: N  
 Lat: 33-52-47 N  
 Lng: 118-00-47 W  
 Power: 50.0 kW  
 Theo RMS: 374.98 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HCXY1-A	0640	QUITO 3		EC	2.045	100.0	2.045*
XENQ1/A	0640	TULANCINGO	HG	MX	0.564	27.6	2.122
OAZ4K-A	0640	DEL PACIFICO		PE	0.529	24.9	2.187
XEWM/A	0640	S.CRISTOBAL DE LA CS	CS	MX	0.374	17.1	2.218
ZP 19-A	0640	CORONEL OVIE		PA	0.300	13.5	2.239
UNK-A	0640	STO ANTONIO		BR	0.296	13.2	2.258

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
TGW-D	0640	VOZDEGUATEMA		GT	2.962
XEHHI/O	0640	HIDALGO DEL PARRA CH	CH	MX	1.414
XEHHI/O	0640	HIDALGO DEL PARRA CH	CH	MX	1.008
XEYQ1/O	0640	FRESNILLO	ZA	MX	0.954
YVQO-B	0640	PTO LA CRUZ		VE	0.930
TIQQ-B	0640	S JOSE 4		CS	0.911
NEW POIN	0640	POINTE A PIT		GP	0.774
CMLA-D	0640	VICTORIA TUN		CU	0.709
HJBJ-B	0640	S MARTA 4		CO	0.612
XESRD/O	0640	SANTIAGO PAPASQUI DU	DU	MX	0.482

## Station Information:

Call: WSM  
 Freq: 650 kHz  
 NASHVILLE, TN, US  
 Hours: U  
 Lat: 35-59-50 N  
 Lng: 086-47-32 W  
 Power: 50.0 kW  
 Theo RMS: 395.90 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJJX-A	0650	BOGOTA 1		CO	1.274	100.0	1.274
YVLH-A	0650	MARACAY 3		VE	0.952	74.7	1.590
HCFD4-A	0650	MANTA 1		EC	0.803	50.5	1.782*
HIAT-C	0650	S DOMINGO 3		DR	0.628	35.3	1.889
ZYI414-A	0650	COLIDER		BR	0.383	20.3	1.928
OAX2N-A	0650	ONDAS NORTE		PE	0.275	14.3	1.947

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
HRVW-B	0650	S PEDRO SULA		HO	3.761
CX6-B	0650	MONTEVIDEO 1		UY	2.206
HOS 22-B	0650	RADIO MIA		PM	1.697
CMFA-D	0650	CIENFUEGOS		CU	1.256
XEEJ1/O	0650	PUERTO VALLARTA	JA	MX	0.995
CMJA-D	0650	STGO DE CUBA		CU	0.881
XEVG/O	0650	MERIDA	YC	MX	0.793
HRLK-B	0650	COMAYAGUA		HO	0.778
XEZM1/O	0650	ZAMORA	MC	MX	0.697
YNWW-B	0650	RADIO SPORT		NU	0.653
XEVILL/O	0650	VILLAHERMOSA	TB	MX	0.615
XEEJ/O	0650	PUERTO VALLARTA	JA	MX	0.390

## Station Information:

Call: WFAN  
 Freq: 660 kHz  
 NEW YORK, NY, US  
 Hours: U  
 Lat: 40-51-35 N  
 Lng: 073-47-09 W  
 Power: 50.0 kW  
 Theo RMS: 379.81 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CB 66-A	0660	SANTIAGO 13		CI	1.070	100.0	1.070
HCLG2-A	0660	GUAYAQUIL		EC	0.794	74.2	1.333
HIAM-C	0660	SANTIAGO 10		DR	0.748	56.1	1.528*
ZYJ-673-0660		PORTO VELHO		BR	0.424	27.7	1.586
XEDTL/A	0660	SAN LORENZO TEZON DF		MX	0.312	19.7	1.616
ZP 26-A	0660	PTE STROESSN		PA	0.303	18.8	1.644
XEEY/A	0660	JALPA		ZA	MX	0.273	16.6
							1.667

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMDC-D	0660	COLON		CU	4.271
YVNA-B	0660	CORO 1		VE	2.890
4VI-B	0660	MENELAS		HA	1.287
RSL-B	0660	RADIO ST LUC		ST	1.251
YSS-D	0660	SAN SALVADOR		ES	1.175
HJJM-B	0660	CALI 18		CO	0.959
YNMJ-B	0660	R MI PREFERI		NU	0.592
HRNN 18-0660		LA CEIBA		HO	0.498
HOF 33-B0660		RPC RADIO		PM	0.416
TGQ-B	0660	QUEZALTENANG		GT	0.360
XENB/O	0660	MACUSPANA		TB	MX
XEEY/O	0660	EL SAUZ II		AG	MX
					0.320

## Station Information:

Call: WSCR  
 Freq: 670 kHz  
 CHICAGO, IL, US  
 Hours: N  
 Lat: 41-56-03 N  
 Lng: 088-04-22 W  
 Power: 50.0 kW  
 Theo RMS: 379.00 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYH-288-0670	0670	TABATINGA		BR	0.626	100.0	0.626
UNK-A	0670	PONTA PORA		BR	0.536	85.5	0.824*
LT4-A	0670	POSADAS		AR	0.250	30.3	0.861
OBX1F-A	0670	CRU 1		PE	0.241	28.0	0.894
ZYJ-921-0670	0670	ARACAJU		BR	0.218	24.4	0.920
LRI209-A0670	0670	MAR DEL PLAT		AR	0.216	23.5	0.945
XEIS/A	0670	CD.GUZMAN	JA	MX	0.212	22.4	0.969
OBX4A-A	0670	RBC		PE	0.208	21.4	0.991
LRA28-A	0670	LA RIOJA		AR	0.207	20.9	1.012
HILB-C	0670	S P MACORIS		DR	0.187	18.5	1.029
LRA52-A	0670	CHOS MALAL		AR	0.184	17.9	1.046

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMBC-D	0670	ARROYO ARENA		CU	5.279
YVLL-B	0670	CARACAS 9		VE	2.414
TGRT-B	0670	FABULOSA		GT	1.420
HRNN-B	0670	TEGUCIGALPA		HO	1.376
HJPL-B	0670	MEDELLIN 4		CO	0.894
TIBAS-B	0670	S JOSE 1		CS	0.800
CMNC-D	0670	MEDIA LUNA		CU	0.620
XE/O	0670	JUCHITAN SALINA	OA	MX	0.465

## Station Information:

Call: KNBR  
 Freq: 680 kHz  
 SAN FRANCISCO, CA, US  
 Hours: U  
 Lat: 37-32-50 N  
 Lng: 122-14-00 W  
 Power: 50.0 kW  
 Theo RMS: 362.10 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HOF 32-A	0680	RADIO RUMBOS		PM	0.434	100.0	0.434
XEOAX/A	0680	OAXACA	OA	MX	0.405	93.3	0.594
XEOAX/	0680	TLALIXTAC DE CABR	OA	MX	0.345	58.2	0.687*
XECHG/A	0680	CHILPANCINGO	GR	MX	0.340	49.5	0.766
CP 34-A	0680	LA PAZ		BL	0.338	44.1	0.837
XE/A	0680	CD.DEL CARMEN	CM	MX	0.329	39.3	0.900
CA 68-A	0680	CHUQUICAMATA		CI	0.329	36.5	0.958
ZYK-275-	0680	PORTO ALEGRE		BR	0.323	33.7	1.011
UNK-A	0680	LABREA		BR	0.300	29.7	1.055
CC 68-A	0680	CONCEPCION		CI	0.299	28.3	1.096

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XESON/O	0680	HERMOSILLO	SO	MX	1.559
XEORO1/0	0680	GUASAVE	SI	MX	1.003
HJBU-B	0680	ZAMBRANO		CO	0.969
YSS-B	0680	CABANAS		ES	0.843
XEORO/O	0680	GUASAVE	SI	MX	0.709
XENF/O	0680	TEPIC	NA	MX	0.705
YVQR-B	0680	CUMANA		VE	0.672
CMIC-D	0680	CIEGO DE AVI		CU	0.566
XEFO1/O	0680	CHIHUAHUA	CH	MX	0.565

## Station Information:

Call: WLW  
 Freq: 700 kHz  
 CINCINNATI, OH, US  
 Hours: U  
 Lat: 39-21-11 N  
 Lng: 084-19-30 W  
 Power: 50.0 kW  
 Theo RMS: 378.20 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYK-686-0700	0700	SAO PAULO	BR	1.427	100.0	1.427	
UNK-A	0700	LINDEN	GY	0.771	54.1	1.622*	
ZP 12-A	0700	PILAR	PA	0.414	25.5	1.674	
ZP76-A	0700	LAGERENZA	PA	0.342	20.5	1.709	
ZYI-890-0700	0700	TERESINA	BR	0.313	18.3	1.737	
HIDC-C	0700	VALVERDE MAO	DR	0.295	17.0	1.762	

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMOC-D	0700	ISLA JUVENTU	CU	2.950	
YVMH-B	0700	MARACAIBO 2	VE	2.796	
HJCX-B	0700	CALI 5	CO	2.775	
TGHR-B	0700	MUNDIAL	GT	1.734	
YNSC-B	0700	R FABULOSO 7	NU	1.577	
HJNJ-B	0700	VDEL CANAGUA	CO	1.576	
JBC-B	0700	MONTEGO BAY	JM	1.492	
HRKL-B	0700	TEGUCIGALPA	HO	1.222	
TIJC-B	0700	S JOSE 8	CS	1.003	
UNK-B	0700	BRIGHTON BAY	VC	0.998	

## Station Information:

Call: KIRO  
 Freq: 710 kHz  
 SEATTLE, WA, US  
 Hours: D  
 Lat: 47-23-55 N  
 Lng: 122-26-00 W  
 Power: 50.0 kW  
 Theo RMS: 334.74 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KCMO	0710	KANSAS CITY	MO	US	0.338	100.0	0.338
XERK/A	0710	TEPIC	NA	MX	0.305	90.3	0.456
KSPN	0710	LOS ANGELES	CA	US	0.276	60.5	0.533
KXMR	0710	BISMARCK	ND	US	0.272	51.0	0.598*
OCX71-A	0710	NAC MADRE DE	1	PE	0.242	40.4	0.645
XEPS/A	0710	EMPALME	SO	MX	0.240	37.2	0.688
KFIA	0710	CARMICHAEL	CA	US	0.202	29.3	0.717
XEON/A	0710	TUXTLA GUTIERREZ	CS	MX	0.189	26.4	0.742
KNUS	0710	DENVER	CO	US	0.176	23.8	0.762
XEDP/A	0710	CD.CUAUHTEMOC	CH	MX	0.159	20.9	0.779

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
HCRS2-B	0710	GUAYAQUIL		EC	0.719
YVKY-B	0710	CARACAS 11		VE	0.619
XEBL1/O	0710	CULIACAN	SI	MX	0.436
CMLC-D	0710	VICTORIA TUN		CU	0.329
HJNX-B	0710	MEDELLIN 6		CO	0.287
XESMR/O	0710	FRACCION EL AGUAJ	SL	MX	0.265
XERL/A	0710	COLIMA		CL	0.256
XEDP/A	0710	CD.CUAUHTEMOC	CH	MX	0.255
XEDP1/A	0710	CD.CUAUHTEMOC	CH	MX	0.252
XESMR/	0710	FRACCION EL AGUAJ	SL	MX	0.237

**Station Information:**

Call: WOR  
 Freq: 710 kHz  
 NEW YORK, NY, US  
 Hours: N  
 Lat: 40-47-50 N  
 Lng: 074-05-24 W  
 Power: 50.0 kW  
 Theo RMS: 2613.00 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 4

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
OCX71-A	0710	NAC MADRE DE	1	PE	0.613	100.0	0.613
WKJB	0710	MAYAGUEZ	PR	US	0.469	76.5	0.772
UNK-A	0710	SANTAREM		BR	0.424	54.9	0.880*
XEON/A	0710	TUXTLA GUTIERREZ	CS	MX	0.375	42.6	0.957
LV7-A	0710	TUCUMAN		AR	0.313	32.7	1.007
LRA19-A	0710	PUERTO IGUAZ		AR	0.302	30.0	1.051
LS1-A	0710	R MUNICIPAL		AR	0.262	24.9	1.083
XERK/A	0710	TEPIC	NA	MX	0.251	23.2	1.112
LRA17-A	0710	ZAPALA		AR	0.249	22.4	1.139
CKVM/	0710	VILLE MARIE	QC	CA	0.239	21.0	1.164

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
YVKY-B	0710	CARACAS 11		VE	2.366
CMLC-D	0710	VICTORIA TUN		CU	2.315
HCRS2-B	0710	GUAYAQUIL		EC	1.787
HJNX-B	0710	MEDELLIN 6		CO	1.068
CMDC-D	0710	MATANZAS 1		CU	0.925
HRKN-B	0710	CATACAMAS 1		HO	0.426
HOB 52-B	0710	ONDAS CARIBE		PM	0.420
TGXL-B	0710	TECUNUMAN		GT	0.369

## Station Information:

Call: WGN  
 Freq: 720 kHz  
 CHICAGO, IL, US  
 Hours: U  
 Lat: 42-00-42 N  
 Lng: 088-02-07 W  
 Power: 50.0 kW  
 Theo RMS: 403.95 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYK276-A	0720	PT ALEGRE	BR		1.403	100.0	1.403
ZYI-770-	0720	RECIFE 1	BR		1.334	95.1	1.936*
ZYH-202-	0720	CRUZEIRO SUL	BR		0.600	31.0	2.027
UNK-A	0720	BARRA GARCAS	BR		0.556	27.4	2.102
HCJC1-A	0720	QUITO 3	EC		0.542	25.8	2.171
HCCB4-A	0720	PORTOVIEJO	EC		0.539	24.8	2.237

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
HJAN-B	0720	BARRANQUILLA	CO		1.765
YVQE-B	0720	PORLAMAR 1	VE		1.730
RJR-B	0720	NAGGO HEAD	JM		1.567
CMMC-D	0720	BARACOA	CU		1.553
YSR-D	0720	SAN SALVADOR	ES		1.332
YNRC-B	0720	RADIO CATOLI	NU		1.245
UNK-B	0720	UITKIJK	NS		1.220
TGRO-D	0720	CORONA	GT		1.038
HOB 50-B	0720	RAD REPUBLIC	PM		1.007
YSR-B	0720	SANTA ANA 1	ES		0.965

## Station Information:

Call: WSB  
 Freq: 750 kHz  
 ATLANTA, GA, US  
 Hours: U  
 Lat: 33-50-38 N  
 Lng: 084-15-12 W  
 Power: 50.0 kW  
 Theo RMS: 379.81 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
LRA7-A	0750	CORDOBA		AR	1.550	100.0	1.550
ZYH-709	0750	BRASILIA		BR	1.115	72.0	1.909
HIDB-C	0750	SANTIAGO 9		DR	1.078	56.5	2.193*
KMMJ	0750	GRAND ISLAND	NE	US	0.473	21.6	2.243
ZYL213-A	0750	CONTAGEM		BR	0.373	16.6	2.274
OAX3T-A	0750	EL MUNDO		PE	0.358	15.7	2.302

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
YNRS4-B	0750	RADIO SANDIN		NU	5.848
YVKS-B	0750	CARACAS 10		VE	3.675
YSS-B	0750	SANTA ANA 8		ES	2.847
HJDK-B	0750	MEDELLIN 13		CO	2.704
JBC-B	0750	GALINA		JM	2.593
XEQF1/O	0750	LOMA BONITA	OA	MX	2.448
CMFC-D	0750	CIENFUEGOS		CU	2.144
TGAJ-B	0750	TROPICANA		GT	2.004
CMJC-D	0750	STGO DE CUBA		CU	1.460
HCCT2-B	0750	GUAYAQUIL		EC	1.258

## Station Information:

Call: WJR  
 Freq: 760 kHz  
 DETROIT, MI, US  
 Hours: U  
 Lat: 42-10-05 N  
 Lng: 083-12-54 W  
 Power: 50.0 kW  
 Theo RMS: 402.34 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CB 76-A	0760	SANTIAGO 15		CI	1.645	100.0	1.645
HICO-C	0760	S DOMINGO 13		DR	0.984	59.8	1.917*
ZP 5-A	0760	ENCARNACION		PA	0.644	33.6	2.022
UNK-A	0760	C GUIMARAES		BR	0.509	25.2	2.085
ZYH423-A	0760	MACAPA		BR	0.450	21.6	2.133
ZYH-588-0760		FORTALEZA		BR	0.367	17.2	2.164
WORA	0760	MAYAGUEZ	PR	US	0.232	10.7	2.177

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMKC-D	0760	CACOCUN		CU	5.066
4VU-B	0760	TORBECK		HA	2.303
HJAJ-B	0760	BARRANQUILLA		CO	1.325
TGHB-B	0760	SUPERRADIO		GT	1.313
HCQR1-B	0760	QUITO 3		EC	1.235
YVQQ-B	0760	PTO LA CRUZ		VE	1.225
TILX-B	0760	S JOSE 4		CS	1.116
XEABC/O	0760	SAN SEBASTIAN CHI MX	MX		0.988
HOXO-B	0760	LA VOZ ISTMO	PM		0.754
8RH-B	0760	SPARENDAAM	GY		0.676

## Station Information:

Call: WABC  
 Freq: 770 kHz  
 NEW YORK, NY, US  
 Hours: N  
 Lat: 40-52-50 N  
 Lng: 074-04-11 W  
 Power: 50.0 kW  
 Theo RMS: 381.41 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CX12-A	0770	MONTEVIDEO		UY	1.286	100.0	1.286
HCMF2-A	0770	GUAYAQUIL		EC	0.794	61.8	1.512*
ZYI-412-0770		DOURADOS		BR	0.513	33.9	1.596
OAX8M-A	0770	LAVOZDELASEL		PE	0.484	30.3	1.668
HIMD-C	0770	TAMBORIL		DR	0.456	27.3	1.729
HRMV-A	0770	COYOLES		HO	0.427	24.7	1.781
HRNN7-A	0770	JUTICALPA 7		HO	0.415	23.3	1.829

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
YVKK-B	0770	VALENCIA 1		VE	2.625
CMNC-D	0770	PILON		CU	2.117
RJR-B	0770	SPUR TREE		JM	1.792
HJKH-B	0770	BOGOTA 21		CO	1.731
HOL 83-B0770		RADIO LIBERT		PM	1.152
XEACH/O	0770	GUADALUPE	NL	MX	0.372
TGBX-B	0770	FRATERNIDAD		GT	0.367
XENVA2/00770		MATAMOROS	TA	MX	0.315
XENVA2/00770		CD.ACUNA	CI	MX	0.287
XEML/A	0770	APATZINGAN	MC	MX	0.285
XEQRV/A	0770	VILLA CARDEL	VC	MX	0.242

**Station Information:**

**Call:** WBBM  
**Freq:** 780 kHz  
**CHICAGO, IL, US**  
**Hours:** N  
**Lat:** 41-59-26 N  
**Lng:** 088-01-39 W  
**Power:** 50.0 kW  
**Theo RMS:** 402.34 mV/m @ 1km @ 1kW

**Standard:** FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
TIRA-A	0780	S JOSE 6	CS		1.126	100.0	1.126
YSKL-A	0780	SAN SALVADOR	ES		0.675	59.9	1.313*
ZYH-291	0780	EIRUNEPE	BR		0.593	45.1	1.441
HRSF-A	0780	ROATAN	HO		0.482	33.4	1.519
CD 78-A	0780	OSORNO	CI		0.482	31.7	1.593
YSKL-A	0780	SANTA ANA 2	ES		0.431	27.1	1.651
YSKL-A	0780	SONSONATE	ES		0.427	25.8	1.705
YSKL-A	0780	SAN MIGUEL	ES		0.422	24.8	1.756
YSKL-A	0780	USULUTAN 2	ES		0.419	23.8	1.806

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
WBBM-AUX	0780	CHICAGO	IL	US	3.831
YVOD-B	0780	SAN CRISTOBA	VE		1.959
HJZW-B	0780	RIOHACHA 1	CO		1.732
ZBV-B	0780	TORTOLA	VI		1.395
HJZG-B	0780	CALI 4	CO		1.018
XESFT/O	0780	SAN FERNANDO	TA	MX	0.763
ZP 70-B	0780	M ROQUE ALON	PA		0.581
CMKC-D	0780	MOA	CU		0.509
XEZN/O	0780	CELAYA	GT	MX	0.469
XEXY1/O	0780	CD. ALTAMIRANO	GR	MX	0.450

## Station Information:

Call: KGO  
 Freq: 810 kHz  
 SAN FRANCISCO, CA, US  
 Hours: U  
 Lat: 37-31-35 N  
 Lng: 122-06-02 W  
 Power: 50.0 kW  
 Theo RMS: 2487.08 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 13

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CX14-A	0810	MONTEVIDEO 1		UY	0.976	100.0	0.976
WGY	0810	SCHENECTADY	NY	US	0.887	90.9	1.319*
WHB	0810	KANSAS CITY	MO	US	0.394	29.9	1.377
WSJC	0810	MAGEE	MS	US	0.345	25.1	1.420
XEOE/A	0810	TAPACHULA	CS	MX	0.319	22.5	1.455
WCKA	0810	JACKSONVILLE	AL	US	0.263	18.1	1.479
KLVZ	0810	BRIGHTON	CO	US	0.242	16.4	1.498
WRSO	0810	ORLOVISTA	FL	US	0.224	15.0	1.515

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
HJCY-B	0810	BOGOTA 22		CO	2.825
XENVA2/00810	0810	SAN LUIS RIO COLO SO	MX		2.439
XENVA2/00810	0810	NOGALES	SO	MX	1.442
XENVA2/00810	0810	NUEVO CASAS GRAND CH	CH	MX	1.017
XESB/O	0810	SANTA BARBARA	CH	MX	0.928
TGMM-B	0810	RADIOMOPAN		GT	0.910
WGY	0810	SCHENECTADY	NY	US	0.887
YSAX-D	0810	SAN SALVADOR		ES	0.866
YVLP-B	0810	VALENCIA 1		VE	0.791
XEMAX/O	0810	TECOMAN	CL	MX	0.541

## Station Information:

Call: WGY  
 Freq: 810 kHz  
 SCHENECTADY, NY, US  
 Hours: N  
 Lat: 42-47-32 N  
 Lng: 074-00-44 W  
 Power: 50.0 kW  
 Theo RMS: 383.00 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CX14-A	0810	MONTEVIDEO 1		UY	1.366	100.0	1.366*
WKVM	0810	SAN JUAN	PR	US	0.674	49.4	1.523
ZYH-589-A	0810	FORTALEZA 1		BR	0.315	20.7	1.555
XEOE/A	0810	TAPACHULA	CS	MX	0.309	19.9	1.586
CJVA/A	0810	CARAQUET	NB	CA	0.276	17.4	1.610
HCVT2-A	0810	ATALAYA		EC	0.223	13.9	1.625
ZYH472-A	0810	JEQUIE		BR	0.195	12.0	1.637
XEIC/A	0810	CAMPECHE	CA	MX	0.188	11.5	1.648
KGO	0810	SAN FRANCISCO	CA	US	0.184	11.2	1.658

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
HJCY-B	0810	BOGOTA 22		CO	5.481
YVLP-B	0810	VALENCIA 1	VE		2.279
CMMB-D	0810	GUANTANAMO	CU		1.621
TGMM-B	0810	RADIOMOPAN	GT		1.173
YSAX-D	0810	SAN SALVADOR	ES		1.012
C6B3-B	0810	FREEPORT	BF		0.916
HCDE2-B	0810	GUAYAQUIL	EC		0.703
HRLP 24-0810		CHOLUTECA 4	HO		0.328

## Station Information:

Call: WBAP  
 Freq: 820 kHz  
 FORT WORTH, TX, US  
 Hours: U  
 Lat: 32-36-38 N  
 Lng: 097-10-00 W  
 Power: 50.0 kW  
 Theo RMS: 397.51 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJED-A	0820	CALI 12		CO	2.007	100.0	2.007*
YVSH-A	0820	UPATA		VE	0.853	42.5	2.180
OAX4O-A	0820	LIBERTAD 1		PE	0.818	37.5	2.329
HCCR1-A	0820	OTAVALO		EC	0.655	28.1	2.419
TIGC-A	0820	S JOSE 8		CS	0.609	25.2	2.495
ZYI-541-0820		SANTAREM		BR	0.582	23.3	2.562
HIAZ-C	0820	SANTIAGO 7		DR	0.450	17.6	2.601

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMBU-D	0820	C HABANA		CU	3.744
UNK-B	0820	CONAREE		SC	3.045
CMIB-D	0820	CIEGO DE AVI		CU	2.718
TGTO-B	0820	INTERNACIONA		GT	2.345
XENVA2/00820		OJINAGA	CH	MX	2.075
4VRD-B	0820	LES CAYES		HA	1.770
XEDRD2/00820		DURANGO	DU	MX	1.726
XEBA/O	0820	ZAPOPAN		JA	1.708
KEESC/O	0820	FRANCISCO ESCARCE	CM	MX	1.422
XENVA2/00820		ALTARES	CI	MX	1.421
XESB/O	0820	SANTA BARBARA	CH	MX	1.291
XENVA2/00820		CAJONCITOS	CH	MX	1.212

## Station Information:

Call: WCCO  
 Freq: 830 kHz  
 MINNEAPOLIS, MN, US  
 Hours: U  
 Lat: 45-10-40 N  
 Lng: 093-20-55 W  
 Power: 50.0 kW  
 Theo RMS: 410.00 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YVLT-A	0830	SAN ANTONIO		VE	1.284	100.0	1.284*
HCRN2-A	0830	QUITO 3		EC	0.594	46.3	1.415
HCRN2-A	0830	GUAYAQUIL		EC	0.579	40.9	1.529
HRXS-A	0830	S PEDRO SULA		HO	0.486	31.8	1.604
HJDM-A	0830	MEDELLIN 7		CO	0.461	28.7	1.669
KHVN	0830	HONOLULU	HI	US	0.229	13.7	1.685
OAX6D-A	0830	NACIONAL TAC		PE	0.203	12.0	1.697

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
UNK-B	0830	BELIZE CITY		BH	2.711
XELA/O	0830	LA MAGDALENA ATLA DF		MX	0.855
TGAX-B	0830	SATELITE		GT	0.751
YSPX-B	0830	SAN MIGUEL		ES	0.624
XENVA2/O	0830	CD.JUAREZ	CH	MX	0.577
HOB 56-B	0830	RAD PENINSUL		PM	0.523
XEVQ1/O	0830	CULIACAN	SI	MX	0.467
CMFB-D	0830	CIENFUEGOS		CU	0.434
XELK/O	0830	ZACATECAS	ZA	MX	0.411
HIJB-D	0830	S DOMINGO 10		DR	0.401

## Station Information:

Call: WHAS  
 Freq: 840 kHz  
 LOUISVILLE, KY, US  
 Hours: U  
 Lat: 38-15-40 N  
 Lng: 085-25-43 W  
 Power: 50.0 kW  
 Theo RMS: 412.00 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYJ-679-0840		PORTO VELHO	BR		1.465	100.0	1.465*
LRK387-A0840		MINA PIRQUIT	AR		0.356	24.3	1.508
CD 84-A 0840		COYHAIQUE 1	CI		0.327	21.7	1.543
HCEM4-A 0840		COSTA AZUL	EC		0.311	20.2	1.574
HIAB-C 0840		PUERTO PLATA	DR		0.307	19.5	1.604
CB 84-A 0840		VALPARAISO	CI		0.298	18.6	1.631
ZYH-447-0840		SALVADOR	BR		0.271	16.6	1.654
LU2-A 0840		BAHIA BLANCA	AR		0.252	15.3	1.673

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMOB-D 0840		ISLA JUVENTU	CU		3.305
YVMY-B 0840		BARQUISIMETO	VE		2.738
CMLB-D 0840		VICTORIA TUN	CU		2.688
RCI-B 0840		RADIOCARIBBE	ST		1.483
HOL-82-B0840		RADIO LIBERT	PM		1.442
YSF-B 0840		SAN SALVADOR	ES		1.325
ZYK687-B0840		SAO PAULO	BR		1.282
YNRN-B 0840		RADIO NOTICI	NU		1.020
HJBI-B 0840		S MARTA 3	CO		1.016
HRQW-B 0840		PTO DE TELA	HO		0.671

## Station Information:

Call: KOA  
 Freq: 850 kHz  
 DENVER, CO, US  
 Hours: U  
 Lat: 39-30-22 N  
 Lng: 104-45-57 W  
 Power: 50.0 kW  
 Theo RMS: 362.10 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
OAX4A-A	0850	NACIONAL 2		PE	1.199	100.0	1.199
CX16-A	0850	MONTEVIDEO 1		UY	1.156	96.4	1.666
TGX-A	0850	CIROS		GT	1.045	62.7	1.966*
ZYH-776-0850		PORANGATU		BR	0.349	17.8	1.997
KHLO	0850	HILO	HI	US	0.333	16.7	2.025
HCVS2-A	0850	GUAYAQUIL		EC	0.217	10.7	2.036
HCGB7-A	0850	ESPEJO		EC	0.210	10.3	2.047

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
KOA-AUX	0850	DENVER	CO	US	25.587
XEM1/O	0850	CHIHUAHUA	CH	MX	1.683
XENVA2/O	0850	SONOITA	SO	MX	1.620
HJKC-B	0850	BOGOTA 18		CO	1.509
Y VLC-B	0850	VALENCIA 1		VE	1.323
HRUP-B	0850	TEGUCIGALPA		HO	1.299
XEUS/O	0850	HERMOSILLO	SO	MX	1.058
TIOS-B	0850	S JOSE 7		CS	1.029
XEZR/O	0850	ZARAGOZA	CI	MX	0.936

## Station Information:

Call: WWL  
 Freq: 870 kHz  
 NEW ORLEANS, LA, US  
 Hours: U  
 Lat: 29-50-14 N  
 Lng: 090-07-55 W  
 Power: 50.0 kW  
 Theo RMS: 2798.70 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 16

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YSAR-A	0870	SAN SALVADOR		ES	2.012	100.0	2.012
LRA-A	0870	RADIO NACION		AR	1.901	94.5	2.768
TGL-A	0870	VICTORIA		GT	1.531	55.3	3.163*
HRH4-A	0870	NACAOME 2		HO	1.364	43.1	3.445
HCGS6-A	0870	PILLARO		EC	0.349	10.1	3.462

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMNB-D	0870	PILON 1		CU	4.431
TIUCR-B	0870	S JOSE 1		CS	3.105
YVKU-B	0870	CARACAS		VE	2.297
XENVA2/O	0870	NUEVO LAREDO	TA	MX	2.233
CMGB-D	0870	S SPIRITUS		CU	1.921
HOHO-B	0870	RADIO MUSICA		PM	1.830
HJLA-B	0870	IBAGUE 4		CO	1.825
YNR6-B	0870	RELOJ NACION		NU	1.764
HCLY2-B	0870	GUAYAQUIL		EC	1.530

**Station Information:**

Call: WCBS  
 Freq: 880 kHz  
 NEW YORK, NY, US  
 Hours: U  
 Lat: 40-51-35 N  
 Lng: 073-47-09 W  
 Power: 50.0 kW  
 Theo RMS: 426.48 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYL-275-0880	0880	BELO HORIZON		BR	1.907	100.0	1.907
OBZ4N-A	0880	UNION		PE	1.381	72.4	2.355
YVMP-A	0880	BARQUISIMETO		VE	1.211	51.4	2.648*
UNK-A	0880	MONTSERRAT		MH	0.964	36.4	2.818
TGJ-A	0880	NUEVOMUNDO		GT	0.588	20.9	2.879
HRGY 4-A	0880	S ROSA COPAN		HO	0.465	16.1	2.916
CB88-A	0880	SANTIAGO 9		CI	0.391	13.4	2.942
WYKO	0880	SABANA GRANDE	PR	US	0.359	12.2	2.964
4VGS-A	0880	GONAIVES		HA	0.358	12.1	2.986
HIOR-C	0880	VALVERDE MAO		DR	0.327	10.9	3.003

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMAB-D	0880	PINAR DEL RI		CU	3.824
HCRP1-B	0880	QUITO		EC	2.682
HRGY-B	0880	TEGUCIGALPA		HO	1.254
HJGE-B	0880	BUCARAMANGA		CO	1.095
CMKG-D	0880	MOA		CU	0.839
YNRE-B	0880	RADIO EXITO		NU	0.437

## Station Information:

Call: WLS  
 Freq: 890 kHz  
 CHICAGO, IL, US  
 Hours: U  
 Lat: 41-33-21 N  
 Lng: 087-50-54 W  
 Power: 50.0 kW  
 Theo RMS: 394.29 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
OAX1D-A	0890	PROGRESO 1	PE	0.704	100.0	0.704	
ZYH-706-0890		BRASILIA	BR	0.506	71.9	0.868	
TIBAS-A	0890	GUANACASTE	CS	0.460	53.0	0.982*	
HRGY 3-A0890		S PEDRO SULA	HO	0.444	45.2	1.078	
HRH6-A	0890	EL PARAISO	HO	0.443	41.1	1.165	
HIPJ-C	0890	S DOMINGO 11	DR	0.363	31.2	1.220	
CD 89-A	0890	PUNTA ARENAS	CI	0.363	29.7	1.273	
ZYK690-A0890		SAO PAULO	BR	0.336	26.4	1.317	
4VVB-A	0890	GONAIVES	HA	0.324	24.6	1.356	
CX18-A	0890	MONTEVIDEO 1	UY	0.322	23.8	1.394	

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMHB-D	0890	CAMAGUEY 3	CU		3.364
YVLW-B	0890	VALENCIA 1	VE		1.963
HOL-81-B0890		RADIO GUAYMI	PM		1.071
TGHU-D	0890	ESCUINTLA	GT		1.017
HJCE-B	0890	BOGOTA IC	CO		0.692
XENVA2/O0890		NUEVO LAREDO	TA	MX	0.645
XENZ1/O 0890		CULIACAN	SI	MX	0.606
XEPC1/O 0890		ZACATECAS	ZA	MX	0.575
XETAP/O 0890		TAPACHULA	CS	MX	0.459

## 1000 KOMO NIF (FCC) x

## Station Information:

Call: KOMO  
 Freq: 1000 kHz  
 SEATTLE, WA, US  
 Hours: N  
 Lat: 47-27-49 N  
 Lng: 122-26-27 W  
 Power: 50.0 kW  
 Theo RMS: 2674.57 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 21

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYK-522-1000	1000	SAO PAULO 1	BR	0.985	100.0	0.985*	
HOK 36-A1000		RADIO PODERO	PM	0.340	34.5	1.042	
HCAW2-A 1000		GUAYAQUIL 2	EC	0.320	30.8	1.090	
XERZ/ 1000		PROVIDENCIA DE NA GT	MX	0.297	27.2	1.130	
XEGQ/A 1000		LOS REYES DE SAL MI	MX	0.252	22.3	1.158	
WMVP 1000		CHICAGO	IL	US	0.249	21.5	1.184
YVNM-A 1000		MORON		VE	0.223	18.9	1.205
CB100-A 1000		SANTIAGO		CI	0.189	15.7	1.220

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XEOY/O 1000		IZTACALCO	DF	MX	0.951
YNTS-B 1000		RADIO MIL		NU	0.429
XENVA2/O1000		SONOITA	SO	MX	0.426
TIMIL-B 1000		S JOSE 4		CS	0.386
HJAQ-B 1000		CARTAGENA 1		CO	0.356
XEFV/O 1000		CD.JUAREZ	CH	MX	0.315
HJJG-B 1000		MANIZALES 1		CO	0.286
KXRB 1000		SIOUX FALLS	SD	US	0.258
YVOA-B 1000		SAN CRISTOBAL		VE	0.256
XEMIL1/O1000		LOS MOCHIS	SI	MX	0.255

## Station Information:

Call: WMVP  
 Freq: 1000 kHz  
 CHICAGO, IL, US  
 Hours: N  
 Lat: 41-49-05 N  
 Lng: 087-59-18 W  
 Power: 50.0 kW - Custom Q Value Used: 70.7  
 Theo RMS: 2612.32 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 1

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYK-522-1000	1000	SAO PAULO 1	BR		2.108	100.0	2.108*
HOK 36-A1000		RADIO PODERO	PM		1.034	49.1	2.348
YVNM-A	1000	MORON	VE		0.870	37.1	2.504
HCAW2-A	1000	GUAYAQUIL 2	EC		0.745	29.8	2.612
HRXZ-A	1000	TEGUCIGALPA	HO		0.466	17.8	2.653
XEGQ/A	1000	LOS REYES DE SAL MI	MX		0.425	16.0	2.687
XERZ/	1000	PROVIDENCIA DE NA GT	MX		0.349	13.0	2.710
KOMO	1000	SEATTLE	WA	US	0.326	12.0	2.729
KCEO	1000	VISTA	CA	US	0.318	11.7	2.748

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XEOY/O	1000	IZTACALCO	DF	MX	1.963
YNTS-B	1000	RADIO MIL		NU	1.267
HJAQ-B	1000	CARTAGENA 1		CO	1.266
TIMIL-B	1000	S JOSE 4		CS	1.142
YVOA-B	1000	SAN CRISTOBA		VE	0.891
HJJG-B	1000	MANIZALES 1		CO	0.870
CMFE-D	1000	CIENFUEGOS		CU	0.712
CMHE-D	1000	CAMAGUEY 1		CU	0.627
CMJE-D	1000	STGO DE CUBA		CU	0.542
XEMYL/O	1000	MERIDA	YC 39	MX	0.476

## Station Information:

Call: KDKA  
 Freq: 1020 kHz  
 PITTSBURGH, PA, US  
 Hours: U  
 Lat: 40-33-33 N  
 Lng: 079-57-11 W  
 Power: 50.0 kW  
 Theo RMS: 431.00 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YVRS-A	1020	LA ASUNCION	VE		1.056	100.0	1.056
HJFQ-A	1020	PEREIRA	CO		1.020	96.6	1.468
HJFT-A	1020	IBAGUE 1	CO		1.005	68.4	1.779
HJKS-A	1020	VILLAVICENCI	CO		0.984	55.3	2.033*
HCEW2-A	1020	GUAYAQUIL 3	EC		0.827	40.7	2.195
HCGO3-A	1020	S ROSA	EC		0.797	36.3	2.335
HJDQ-A	1020	MEDELLIN 5	CO		0.762	32.6	2.456
HCRS6-A	1020	GUARANDA	EC		0.594	24.2	2.527
CP 4-A	1020	LA PAZ	BL		0.547	21.6	2.586
UNK-A	1020	BOA VISTA	BR		0.523	20.2	2.638
TIBAS-A	1020	PUNTARENAS	CS		0.391	14.8	2.667

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
YSC-B	1020	SAN SALVADOR	ES		1.401
YVMX-B	1020	MARACAIBO 7	VE		1.225
YNTX-B	1020	RADIO BONITA	NU		0.960
CMLE-D	1020	VICTORIA TUN	CU		0.743
CMME-D	1020	GUANTANAMO	CU		0.681
XECUS/O	1020	MACUSPANA	TB	MX	0.539
HRUW-B	1020	LA CEIBA 2		HO	0.501
KEYN/O	1020	OAXACA	OA	MX	0.465
TGCM-B	1020	FRONTERA		GT	0.438

## Station Information:

Call: WBZ  
 Freq: 1030 kHz  
 BOSTON, MA, US  
 Hours: U  
 Lat: 42-16-44 N  
 Lng: 070-52-34 W  
 Power: 50.0 kW - Custom Q Value Used: 70.71  
 Theo RMS: 2783.99 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 5

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YVQY-A	1030	GUANARE 1		VE	1.048	100.0	1.048
HJDJ-A	1030	DUITAMA 2		CO	0.933	89.0	1.404
UNK-A	1030	DOMBURG		NS	0.806	57.5	1.619*
HCF07-A	1030	COCA		EC	0.415	25.7	1.671
HJGX-A	1030	LORICA		CO	0.380	22.8	1.714
WOSO	1030	SAN JUAN	PR	US	0.376	21.9	1.755
CC 103-A	1030	CONCEPCION		CI	0.349	19.9	1.789
ZYI-777-1030	1030	OLINDA		BR	0.306	17.1	1.815
ZYJ-467-1030	1030	RIO DE JANEI		BR	0.279	15.3	1.836
HCRR2-A	1030	GUAYAQUIL 2		EC	0.260	14.2	1.855

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
4VEC-B	1030	PETITEANSE		HA	1.830
YVTD-B	1030	OCUMARE		VE	1.079
HJER-B	1030	CALI 5		CO	1.051
TGUX-D	1030	PANAMERICANA		GT	0.958
CMDE-C	1030	MATANZAS		CU	0.717
CMIE-D	1030	CIEGO DE AVI		CU	0.714
CMNE-D	1030	BAYAMO 1		CU	0.672
CMAE-D	1030	PINAR DEL RI		CU	0.642
XEQR/O	1030	GRANJAS MEXICO	DF 41	MX	0.592

## Station Information:

Call: WHO  
 Freq: 1040 kHz  
 DES MOINES, IA, US  
 Hours: N  
 Lat: 41-39-10 N  
 Lng: 093-21-01 W  
 Power: 50.0 kW  
 Theo RMS: 471.54 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYK537-A	1040	SAO PAULO	BR		1.137	100.0	1.137
TIAC-A	1040	S JOSE 4	CS		1.104	97.1	1.585
HJFM-A	1040	ARMENIA 2	CO		0.799	50.4	1.774*
HJCJ-A	1040	BOGOTA 7	CO		0.774	43.6	1.936
OBX4O-A	1040	ONDA POPULAR	PE		0.554	28.6	2.014
HCEV5-A	1040	CUENCA	EC		0.382	19.0	2.049
LW1-A	1040	CORDOBA	AR		0.245	12.0	2.064
KLHT	1040	HONOLULU	HI	US	0.229	11.1	2.077

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMAO-D	1040	SAN CRISTOBA	CU		2.100
HJBF-B	1040	CUCUTA 8	CO		0.991
HJAI-B	1040	BARRANQUILLA	CO		0.932
XENVA2/O	1040	PIEDRAS NEGRAS	CI	MX	0.889
XENVA2/O	1040	OJINAGA	CH	MX	0.795
YVON-B	1040	MERIDA	VE		0.793
XEGR1/O	1040	COATEPEC	VC	MX	0.768
YVLB-B	1040	VALENCIA	VE		0.749
XE/O	1040	CULIACAN	SI	MX	0.681
XESAG/O	1040	SALAMANCA	GT	MX	0.619
XEGR/O	1040	COATEPEC	VC	MX	0.607

## Station Information:

Call: KYW  
 Freq: 1060 kHz  
 PHILADELPHIA, PA, US  
 Hours: U  
 Lat: 40-06-12 N  
 Lng: 075-14-56 W  
 Power: 50.0 kW - Custom Q Value Used: 70.711  
 Theo RMS: 2558.86 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 10  
  
 Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
XEEP/A	1060	EJERCITO DE ORIEN DF	MX		1.977	100.0	1.977
UNK-A	1060	DOMINICA	DO		1.720	87.0	2.621
CB 106-A	1060	SANTIAGO 3	CI		1.551	59.2	3.045*
HCAK2-A	1060	GUAYAQUIL 2	EC		1.328	43.6	3.322
HJFJ-A	1060	MANIZALES	CO		1.319	39.7	3.575
HJMV-A	1060	CHIQUINQUIRA	CO		1.105	30.9	3.741
WQOM	1060	NATICK	MA	US	0.473	12.6	3.771
XEXXX/A	1060	TAMAZULA DE GODIA	JA	MX	0.454	12.0	3.798
WCGB	1060	JUANA DIAZ	PR	US	0.386	10.2	3.818

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMAL-D	1060	PINAR DEL RI	CU		2.507
TGLR-B	1060	FAVORITA	GT		1.309
YNM13-B	1060	RADIO FUTURA	NU		1.302
YVLN-B	1060	S JUAN MORRO	VE		1.232
YVOE-B	1060	SAN CRISTOBA	VE		1.180
CMLO-D	1060	C AMANCIO R	CU		0.782
HRVW-B	1060	TEGUCIGALPA	HO		0.440
HOMQ-B	1060	VOZ DE PANAM	PM		0.393

## Station Information:

Call: KNX  
 Freq: 1070 kHz  
 LOS ANGELES, CA, US  
 Hours: U  
 Lat: 33-51-35 N  
 Lng: 118-20-56 W  
 Power: 50.0 kW  
 Theo RMS: 400.73 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CBA/	1070	MONCTON	NB	CA	0.527	100.0	0.527
XERPR/A	1070	TUXTLA GUTIERREZ	CS	MX	0.416	79.0	0.672
OAX2B-A	1070	TRUJILLO		PE	0.414	61.6	0.789*
UNK-A	1070	CAYENNE 1		FG	0.377	47.7	0.874
XE/A	1070	VALLADOLID	YC	MX	0.362	41.4	0.946
HRGR-A	1070	EL PARAISO		HO	0.335	35.4	1.004
XEGY/A	1070	TEHUACAN		PU	MX	0.289	28.8
LRK385-A	1070	LA MADRID		AR	0.245	23.5	1.073
XEIT/A	1070	CD.DEL CARMEN	CM	MX	0.212	19.7	1.093
WMIA	1070	ARECIBO	PR	US	0.209	19.1	1.113

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XEZO/O	1070	GUERRERO NEGRO	BS	MX	1.967
XEOBS/O	1070	CD.OBREGON	SO	MX	1.145
CMAL	1070	PINAR DEL RI		CU	1.012
YNRPS-B	1070	RADIO GRANAD		NU	1.005
HJCG-B	1070	BOGOTA 3		CO	1.004
XE/O	1070	MAZATLAN	SI	MX	0.930
XESP/O	1070	SAN PEDRO TLAQUEP	JA	MX	0.915
HJAH-B	1070	BARRANQUILLA		CO	0.875
XE/O	1070	FRESNILLO	ZA	MX	0.777

## Station Information:

Call: KRLD

Freq: 1080 kHz

DALLAS, TX, US

Hours: N

Lat: 32-53-25 N

Lng: 096-38-44 W

Power: 50.0 kW - Custom Q Value Used: 70.71

Theo RMS: 2758.90 mV/m @ 1km @ 50.0 kW

# of Augmentations: 19

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
WTIC	1080	HARTFORD	CT	US	1.914	100.0	1.914
HJJS-A	1080	LA DORADA		CO	1.559	81.5	2.469
HJAW-A	1080	MONTERIA 3		CO	1.473	59.7	2.875*
HJJF-A	1080	CALI 7		CO	1.266	44.0	3.141
HJPF-A	1080	FLORIDABLANC		CO	1.261	40.2	3.385
HJKT-A	1080	VILLAVICENCI		CO	1.187	35.1	3.587
HCVH6-A	1080	LATACUNGA		EC	1.159	32.3	3.769
HCFD2-A	1080	GUAYAQUIL 2		EC	1.145	30.4	3.939

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMAM-D	1080	GUANE		CU	4.126
YSEM-B	1080	SAN SALVADOR		ES	2.941
XENVA2/O	1080	PIEDRAS NEGRAS	CI	MX	2.209
XENVA2/O	1080	CD.JUAREZ	CH	MX	2.199
CMMQ-D	1080	BARACOA 1		CU	1.992
XE/O	1080	XICOTENCATL	TA	MX	1.747
XE/O	1080	ZITACUARO	MC	MX	1.642
TIFC-B	1080	S JOSE 4		CS	1.448
XEJLV/O	1080	PUERTO VALLARTA	JA	MX	1.433
XESAC1/O	1080	SALTILLO	CI	MX	1.423

## Station Information:

Call: WTIC  
 Freq: 1080 kHz  
 HARTFORD, CT, US  
 Hours: N  
 Lat: 41-46-39 N  
 Lng: 072-48-19 W  
 Power: 50.0 kW - Custom Q Value Used: 70.71  
 Theo RMS: 2539.54 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 15

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJJS-A	1080	LA DORADA		CO	1.177	100.0	1.177
HJAW-A	1080	MONTERIA 3		CO	1.080	91.8	1.597
KRLD	1080	DALLAS	TX	US	1.078	67.5	1.927
HJPF-A	1080	FLORIDABLANC		CO	1.016	52.7	2.178*
HJKT-A	1080	VILLAVICENCI		CO	0.921	42.3	2.365
HJJF-A	1080	CALI 7		CO	0.894	37.8	2.528
HCVH6-A	1080	LATACUNGA		EC	0.777	30.7	2.645
HCFD2-A	1080	GUAYAQUIL 2		EC	0.744	28.1	2.748
OAX4F-A	1080	NACIONAL 108		PE	0.587	21.4	2.810

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMMQ-D	1080	BARACOA 1		CU	2.013
CMAM-D	1080	GUANE		CU	1.910
YVNR-B	1080	MARACAY 1		VE	1.115
YVQJ-B	1080	BARCELONA 1		VE	1.083
YSEM-B	1080	SAN SALVADOR		ES	1.062
TIFC-B	1080	S JOSE 4		CS	0.733
OOX1D-B	1080	SAN MIGUEL		ES	0.684
HRID-B	1080	TEL A		HO	0.380
HRXN-B	1080	CHOLUTECA 2		HO	0.349

## Station Information:

Call: KAAY  
 Freq: 1090 kHz  
 LITTLE ROCK, AR, US  
 Hours: N  
 Lat: 34-36-00 N  
 Lng: 092-13-30 W  
 Power: 50.0 kW - Custom Q Value Used: 70.8  
 Theo RMS: 2623.00 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 10

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJBC-A	1090	CUCUTA 4	CO		1.321	100.0	1.321
YVTG-A	1090	MACHIQUES	VE		1.008	76.3	1.661*
CP 57-A	1090	LA PAZ	BL		0.633	38.1	1.778
HCRP5-A	1090	RIOBAMBA 6	EC		0.555	31.2	1.863
XEHR/A	1090	PUEBLA	PU	MX	0.483	25.9	1.924
WBAL	1090	BALTIMORE	MD	US	0.459	23.8	1.978
HJIH-A	1090	SOGAMOSO		CO	0.394	19.9	2.017
HCAB4-A	1090	MANTA 1		EC	0.372	18.4	2.051
WSOL	1090	SAN GERMAN	PR	US	0.356	17.4	2.082

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
YSMG-D	1090	AHUACHAPAN	ES		2.753
HOL 83-B	1090	SNR RAD URRA	PM		1.699
CMAW-D	1090	MATAHAMBRE	CU		1.473
XENVA2/O	1090	ALTARES	CI	MX	1.446
XEWL/O	1090	NUEVO LAREDO	TA	MX	1.311
XEXE2/O	1090	QUERETARO	QE	MX	1.270
XELB1/O	1090	LA BARCA	JA	MX	1.260
YVPB-B	1090	SAN FELIPE	VE		1.253
YVSZ-B	1090	CARACAS 3	VE		1.170

## Station Information:

Call: WBAL

Freq: 1090 kHz

BALTIMORE, MD, US

Hours: N

Lat: 39-22-33 N

Lng: 076-46-21 W

Power: 50.0 kW - Custom Q Value Used: 24.784

Theo RMS: 2661.85 mV/m @ 1km @ 50.0 kW

# of Augmentations: 13

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJBC-A	1090	CUCUTA 4		CO	1.253	100.0	1.253
YVTG-A	1090	MACHIQUES		VE	0.977	78.0	1.588*
CP 57-A	1090	LA PAZ		BL	0.589	37.1	1.694
KAAY	1090	LITTLE ROCK	AR	US	0.508	30.0	1.769
WSOL	1090	SAN GERMAN	PR	US	0.474	26.8	1.831
HCRP5-A	1090	RIOBAMBA 6		EC	0.451	24.6	1.886
UNK-A	1090	VIEUX FORT		ST	0.408	21.6	1.930
HJIH-A	1090	SOGAMOSO		CO	0.365	18.9	1.964
HIJM-C	1090	SANTIAGO		DR	0.358	18.2	1.996

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
YSMG-D	1090	AHUACHAPAN		ES	1.431
YVPB-B	1090	SAN FELIPE		VE	1.343
HOL 83-B	1090	SNR RAD URRA	PM		1.330
YVSZ-B	1090	CARACAS 3	VE		1.307
HJIG-B	1090	FLORENCIA 2	CO		1.005
CMAW-D	1090	MATAHAMBRE	CU		0.911
HJIA-B	1090	MANIZALES 5	CO		0.821
HRWC-B	1090	TEGUCIGALPA	HO		0.489
XE/O	1090	OCOTLAN DE MORELO OA	MX		0.404
XELB1/O	1090	LA BARCA	JA	MX	0.403

## Station Information:

Call: WTAM  
 Freq: 1100 kHz  
 CLEVELAND, OH, US  
 Hours: U  
 Lat: 41-16-50 N  
 Lng: 081-37-22 W  
 Power: 50.0 kW  
 Theo RMS: 387.85 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZYK-694-1100	1100	SAO PAULO	BR	2.032	100.0	2.032	
ZDK-A	1100	GRENVILLE RA	AC	1.588	78.1	2.578*	
PJL 3-A	1100	R CARIBE	NA	1.126	43.7	2.814	
YVSW-A	1100	CIUDAD BOLIV	VE	0.881	31.3	2.949	
HJMK-A	1100	PLANETA RICA	CO	0.770	26.1	3.047	
HCFW2-A	1100	GUAYAQUIL 2	EC	0.432	14.2	3.078	
HCJC5-A	1100	CUENCA	EC	0.423	13.7	3.107	
CB 110-A1100	1100	VINA DEL MAR	CI	0.384	12.3	3.130	

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
YVOP-B	1100	TOVAR	VE	1.037	
TGSR-B	1100	SUPERIOR	GT	0.958	
HJCN-B	1100	BOGOTA 20	CO	0.943	
YNVAC-B	1100	RADIO MANAGU	NU	0.918	
HOR 58-B	1100	RADIO MIL	PM	0.811	
YSRF-B	1100	SAN SALVADOR	ES	0.741	
HJGQ-B	1100	ANDES	CO	0.700	
CMKP-D	1100	BANES	CU	0.671	

## Station Information:

Call: KFAB  
 Freq: 1110 kHz  
 OMAHA, NE, US  
 Hours: N  
 Lat: 41-07-11 N  
 Lng: 096-00-06 W  
 Power: 50.0 kW - Custom Q Value Used: 60.35  
 Theo RMS: 2848.54 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 16

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJZE-A	1110	SINCELEJO 4	CO		1.080	100.0	1.080
HJEW-A	1110	CALI 3	CO		0.779	72.1	1.332
HJDI-A	1110	MEDELLIN 3	CO		0.776	58.3	1.541
HJNC-A	1110	IBAGUE 2	CO		0.776	50.3	1.726*
HJJP-A	1110	VILLAVICENCI	CO		0.743	43.1	1.879
HJGP-A	1110	VDEL RIO ARA	CO		0.519	27.6	1.949
TGMK-A	1110	MARINALA	GT		0.473	24.3	2.006
HRLP 25-1110	1110	CHOLUTECA 2	HO		0.424	21.1	2.050
YNAZ-A	1110	RADIO CENTRO	NU		0.405	19.8	2.090
WBT	1110	CHARLOTTE	NC	US	0.396	19.0	2.127

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XERED/O	1110	SAN JERONIMO TEPE DF	MX		2.257
CMKL-D	1110	HOLGUIN	CU		1.363
XEES1/O	1110	CHIHUAHUA	CH	MX	0.826
YVRX-B	1110	VALENCIA 1	VE		0.718
XEJVJ/O	1110	PUERTO VALLARTA	JA	MX	0.634
YVQT-B	1110	CARUPANO	VE		0.617
XENVA2/O	1110	CD.ACUNA	CI	MX	0.500
XEVS/O	1110	VILLA DE SERIS	SO	MX	0.437

**Station Information:**

Call: WBT  
 Freq: 1110 kHz  
 CHARLOTTE, NC, US  
 Hours: N  
 Lat: 35-07-56 N  
 Lng: 080-53-23 W  
 Power: 50.0 kW  
 Theo RMS: 2558.86 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 22

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJZE-A	1110	SINCELEJO 4	CO	2.308	100.0		2.308
HJDI-A	1110	MEDELLIN 3	CO	1.540	66.7		2.775
HJNC-A	1110	IBAGUE 2	CO	1.489	53.7		3.149*
HJJP-A	1110	VILLAVICENCI	CO	1.445	45.9		3.465
HJEW-A	1110	CALI 3	CO	1.443	41.6		3.753
HJGP-A	1110	VDEL RIO ARA	CO	1.107	29.5		3.913
HJPA-A	1110	S ANDRES 2	CO	0.749	19.1		3.984
HRLP 25-1110	1110	CHOLUTECA 2	HO	0.742	18.6		4.053
TGMK-A	1110	MARINALA	GT	0.723	17.8		4.117
YNAZ-A	1110	RADIO CENTRO	NU	0.703	17.1		4.176
UNK-A	1110	MANAUS	BR	0.603	14.4		4.220

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMKL-D	1110	HOLGUIN	CU		4.227
XERED/O	1110	SAN JERONIMO TEPE DF	MX		2.307
YVRX-B	1110	VALENCIA 1	VE		1.687
YVQT-B	1110	CARUPANO	VE		1.493
XEPVJ/O	1110	PUERTO VALLARTA	JA	MX	0.497

## Station Information:

Call: KMOX  
 Freq: 1120 kHz  
 ST. LOUIS, MO, US  
 Hours: N  
 Lat: 38-43-21 N  
 Lng: 090-03-18 W  
 Power: 50.0 kW  
 Theo RMS: 399.12 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City		St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YVMF-A	1120	MARACAIBO	5		VE	1.141	100.0	1.141
HJKQ-A	1120	TUNJA	3		CO	1.014	88.9	1.526
HCRV2-A	1120	GUAYAQUIL			EC	0.888	58.2	1.766*
OAX1K-A	1120	NACIONAL	3		PE	0.860	48.7	1.964
OAXBAA-A	1120	NACIONAL	1		PE	0.784	39.9	2.115
HJGH-A	1120	BUCARAMANGA			CO	0.748	35.3	2.243
ZYK-274-1120		PORTO ALEGRE			BR	0.628	28.0	2.330
OAX6D-A	1120	NACIONAL			PE	0.541	23.2	2.392
HCAS7-A	1120	PUYO			EC	0.485	20.3	2.440
OAX6X-A	1120	MELODIA			PE	0.359	14.7	2.467

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City		St	Ct	Limit (mV/m)
CMCW-D	1120	ARTEMISA			CU	2.178
YNHLI-B	1120	R LIBERTADOR			NU	1.791
TISRHB-B	1120	S JOSE 2			CS	1.027
HICN-D	1120	S DOMINGO	1		DR	0.987
XENVA2/O	1120	NUEVO LAREDO		TA	MX	0.985
XETQE/O	1120	TENOSIQUE		TB	MX	0.718
XE/O	1120	TUXTLA GUTIERREZ		CS	MX	0.679
XETR1/O	1120	CD. VALLES		SL	MX	0.643
CMKQ-D	1120	MAYARI			CU	0.638
TGC-B	1120	PODEROSA			GT	0.613

## Station Information:

Call: KWKH  
 Freq: 1130 kHz  
 SHREVEPORT, LA, US  
 Hours: N  
 Lat: 32-42-18 N  
 Lng: 093-52-55 W  
 Power: 50.0 kW  
 Theo RMS: 2838.88 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 27

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJAC-A	1130	BARRANQUILLA	CO		1.709	100.0	1.709
4VBD-A	1130	CAP HAITIEN	HA		1.431	83.7	2.229
HJTI-A	1130	CUCUTA 6	CO		1.409	63.2	2.637*
YVRL-A	1130	MACUTO	VE		1.217	46.2	2.904
HRBT-A	1130	S FRANCISCO	HO		1.170	40.3	3.131
YVPY-A	1130	PTO AYACUCHO	VE		1.112	35.5	3.323
UNK-A	1130	VIEUX FORT	ST		0.990	29.8	3.467
HJCO-A	1130	BOGOTA 19	CO		0.947	27.3	3.594
CKWX/A	1130	VANCOUVER	BC	CA	0.938	26.1	3.714

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
HRPL-B	1130	PROGRESO 1	HO		3.479
CMKU-D	1130	SAG DE TANAM	CU		2.520
XEZL/O	1130	JALAPA	VC	MX	1.771
XECHG/O	1130	CHILPANCINGO	GR	MX	1.332
HJFP-B	1130	NEIVA	CO		1.301
XELUP/O	1130	COMPOSTELA	NA	MX	1.214
HRDG-B	1130	DANLI 1	HO		1.123
TGVR-B	1130	LAVOZCOSTASU	GT		1.112
XELUP1/O	1130	LAS VARAS	NA	MX	1.084
YSJA-B	1130	SANTA ANA 6	ES		1.035

**Station Information:**

Call: WBBR  
 Freq: 1130 kHz  
 NEW YORK, NY, US  
 Hours: N  
 Lat: 40-48-39 N  
 Lng: 074-02-24 W  
 Power: 50.0 kW  
 Theo RMS: 2389.88 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 8

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
4VBD-A	1130	CAP HAITIEN	HA		1.501	100.0	1.501
HJAC-A	1130	BARRANQUILLA	CO		1.285	85.6	1.976
UNK-A	1130	VIEUX FORT	ST		1.233	62.4	2.329
YVRL-A	1130	MACUTO	VE		1.208	51.9	2.624*
HJTI-A	1130	CUCUTA 6	CO		1.130	43.1	2.857
YVPY-A	1130	PTO AYACUCHO	VE		1.010	35.4	3.030
ZYJ-461-1130	1130	RIO DE JANEI	BR		0.898	29.6	3.160
HJCO-A	1130	BOGOTA 19	CO		0.712	22.5	3.240
ZYI-531-1130	1130	BELEM	BR		0.623	19.2	3.299
HRBT-A	1130	S FRANCISCO	HO		0.491	14.9	3.335
WDFN	1130	DETROIT	MI	US	0.470	14.1	3.368

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMKU-D	1130	SAG DE TANAM	CU		2.274
HRPL-B	1130	PROGRESO 1	HO		1.313
HJFP-B	1130	NEIVA	CO		0.945
HRDG-B	1130	DANLI 1	HO		0.470
HCIR1-B	1130	POMASQUI	EC		0.469

## Station Information:

Call: WRVA  
 Freq: 1140 kHz  
 RICHMOND, VA, US  
 Hours: U  
 Lat: 37-24-13 N  
 Lng: 077-18-59 W  
 Power: 50.0 kW  
 Theo RMS: 2574.95 mV/m @ 1km @ 50.0 kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YVNU-A	1140	CARORA		VE	1.580	100.0	1.580
YVOO-A	1140	S ANT TACHIR		VE	1.459	92.4	2.150
CB	114-A	1140 SANTIAGO 2		CI	1.394	64.8	2.563
HJDL-A	1140	MEDELLIN 15		CO	1.389	54.2	2.915*
HJKW-A	1140	VILLAVICENCI		CO	1.262	43.3	3.176
HCIR1-A	1140	QUITO		EC	0.590	18.6	3.231
WQII	1140	SAN JUAN	PR	US	0.531	16.4	3.274
TIBAS-A	1140	ALAJUELA 1		CS	0.509	15.5	3.313
XETE1/A	1140	TEHUACAN	PU	MX	0.474	14.3	3.347
ZYH-449-1140		SALVADOR		BR	0.468	14.0	3.380

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMBW-D	1140	C HABANA		CU	3.969
CMNW	1140	PILON 1		CU	3.095
YST-B	1140	SAN SALVADOR		ES	1.725
HJKO-B	1140	CARTAGENA		CO	1.690
HJFH-B	1140	ANSERMA		CO	1.332
HJTR-B	1140	GIRARDOT 1		CO	1.274
CMNN-D	1140	MEDIA LUNA		CU	1.005
HRUN-B	1140	LA CEIBA 2		HO	0.645
XEMR/O	1140	SAN NICOLAS DE LO NL		MX	0.632

## 1160 KSL NIF(FCC)x

## Station Information:

Call: KSL  
 Freq: 1160 kHz  
 SALT LAKE CITY, UT, US  
 Hours: U  
 Lat: 40-46-46 N  
 Lng: 112-05-56 W  
 Power: 50.0 kW  
 Theo RMS: 399.12 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJVA-A	1160	BOGOTA 11		CO	0.516	100.0	0.516
HJEC-A	1160	SN JOSE DCUC		CO	0.502	97.3	0.720
HJAZ-A	1160	MONTERIA 1		CO	0.402	55.8	0.825*
HJBL-A	1160	BARRANQUILLA		CO	0.397	48.1	0.915
HJZV-A	1160	R LAS LAJAS		CO	0.386	42.2	0.994
UNK-A	1160	RAD LITEHOUS		AC	0.361	36.3	1.057
YVOK-A	1160	MERIDA 1		VE	0.341	32.2	1.111
OAX9A-A	1160	IMAGEN		PE	0.339	30.5	1.161
OAX4C-A	1160	ONCE SESENTA		PE	0.319	27.5	1.204
HJAU-A	1160	FLORENCIA 1		CO	0.261	21.6	1.232
XE/A	1160	FRANCISCO ESCARCE CM		MX	0.252	20.5	1.258

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XENVA2/01160	1160	SONOITA	SO	MX	1.952
XENVA2/01160	1160	CD.JUAREZ	CH	MX	1.599
CMCU-D	1160	GUINES		CU	0.952
XEIW/O	1160	URUAPAN	MC	MX	0.563
HREJ-B	1160	S PEDRO SULA		HO	0.551
HOMQ-B	1160	VOZ DE PANAM		PM	0.504
XEIU/O	1160	OAXACA	OA	MX	0.425
YVRR-B	1160	GUARENAS		VE	0.410
TGRI-B	1160	IZABAL		GT	0.331

**Station Information:**

Call: KFAQ

Freq: 1170 kHz

TULSA, OK, US

Hours: N

Lat: 36-08-47 N

Lng: 095-48-26 W

Power: 50.0 kW - Custom Q Value Used: 64.374

Theo RMS: 2574.95 mV/m @ 1km @ 50.0 kW

# of Augmentations: 12

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJDT-A	1170	MEDELLIN 9		CO	1.131	100.0	1.131
YNVW-A	1170	RADIO DARIO		NU	1.077	95.2	1.562
HCJM4-A	1170	ESMERALDAS		EC	1.058	67.7	1.887
HJGA-A	1170	TUNJA 1		CO	1.038	55.0	2.153*
HJLB-A	1170	ARAUCA		CO	0.994	46.2	2.372
YVPX-A	1170	LA FRIA		VE	0.762	32.1	2.491
WWVA	1170	WHEELING	WV	US	0.650	26.1	2.575
ZYJ-273-1170	1170	CURITIBA		BR	0.588	22.8	2.641
HJJE-A	1170	TULUA		CO	0.394	14.9	2.670
HJJY-A	1170	GUAMO		CO	0.381	14.3	2.697

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMNW-D	1170	PILON 1		CU	1.956
TGRL-D	1170	LANDIVAR		GT	1.751
XENVA2/O1170	1170	OJINAGA	CH	MX	1.746
YSVE-D	1170	SAN SALVADOR		ES	1.568
XEUVA/O	1170	AGUASCALIENTES	AG	MX	1.510
4VRS-B	1170	TRUITIER		HA	1.445
HJNW-B	1170	CARTAGENA 5		CO	1.287
XERT/O	1170	REYNOSA		TA	1.193
XEMDA/O	1170	MONCLOVA		CI	1.130

## Station Information:

Call: WWVA

Freq: 1170 kHz

WHEELING, WV, US

Hours: N

Lat: 40-06-07 N

Lng: 080-52-02 W

Power: 50.0 kW - Custom Q Value Used: 70.71

Theo RMS: 2574.95 mV/m @ 1km @ 50.0 kW

# of Augmentations: 12

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJDT-A	1170	MEDELLIN 9		CO	1.110	100.0	1.110
HJLB-A	1170	ARAUCA		CO	1.077	97.1	1.547
HJGA-A	1170	TUNJA 1		CO	1.058	68.4	1.874
HCJM4-A	1170	ESMERALDAS		EC	0.939	50.1	2.096*
YVPX-A	1170	LA FRIA		VE	0.813	38.8	2.248
YNVW-A	1170	RADIO DARIO		NU	0.788	35.0	2.382
ZYJ-273-	1170	CURITIBA		BR	0.593	24.9	2.455
HJJE-A	1170	TULUA		CO	0.377	15.4	2.484
HJJY-A	1170	GUAMO		CO	0.373	15.0	2.512
HJWA-A	1170	S GUAVIARE		CO	0.348	13.8	2.536
KFAQ	1170	TULSA	OK	US	0.332	13.1	2.557

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMNW-D	1170	PILON 1		CU	2.281
4VRS-B	1170	TRUITTIER		HA	1.897
HJNW-B	1170	CARTAGENA 5		CO	1.310
YVQV-B	1170	ACARIGUA		VE	1.152
HJPB-B	1170	VALLEDUPAR 4		CO	1.118
TGRL-D	1170	LANDIVAR		GT	1.058

## Station Information:

Call: WHAM  
 Freq: 1180 kHz  
 ROCHESTER, NY, US  
 Hours: U  
 Lat: 43-04-55 N  
 Lng: 077-43-30 W  
 Power: 50.0 kW  
 Theo RMS: 376.59 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
HJGK-A	1180	BUCARAMANGA		CO	1.282	100.0	1.282
TIQ-A	1180	LIMON		CS	1.008	78.6	1.631
YVNJ-A	1180	BACHAQUERO		VE	0.986	60.4	1.906
CB 118-A	1180	SANTIAGO 6		CI	0.984	51.6	2.144*
YVOR-A	1180	MATURIN 1		VE	0.895	41.7	2.324
ZYJ-463-1180	1180	RIO DE JANEI		BR	0.351	15.1	2.350
ZYH-889-1180	1180	S LUIZ 1		BR	0.326	13.9	2.372
ZYH-280-1180	1180	MANAUS		BR	0.315	13.3	2.393

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
WHAM-AUX	1180	ROCHESTER	NY	US	3.788
CMGL-D	1180	S SPIRITUS		CU	1.978
TGT-D	1180	SONORA		GT	1.079
HJOV-B	1180	NEIVA 4		CO	0.984
HJJT-B	1180	VDEL RIO BLA		CO	0.842
NEW LIZE	1180	LIZELLA	GA	US	0.758
HCLR1-B	1180	QUITO		EC	0.740
XEFR1/O	1180	MAGDALENA MIXHUCA DF	MX		0.721
CMJW-D	1180	MAYARI ARRIB		CU	0.559
XEDCH/O	1180	CD. DELICIAS	CH	MX	0.409

## 1190 KEX NIF (FCC)x

## Station Information:

Call: KEX  
 Freq: 1190 kHz  
 PORTLAND, OR, US  
 Hours: N  
 Lat: 45-25-20 N  
 Lng: 122-33-57 W  
 Power: 50.0 kW  
 Theo RMS: 2824.40 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 20

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
XEWK/A	1190	GUADALAJARA	JA	MX	1.311	100.0	1.311*
KDMR	1190	KANSAS CITY	MO	US	0.373	28.4	1.363
HJOH-A	1190	TUMACO		CO	0.351	25.7	1.407
KFXR	1190	DALLAS	TX	US	0.297	21.1	1.438
YVZD-A	1190	SAN CRISTOBAL		VE	0.283	19.7	1.466
CFSL/A	1190	WEYBURN	SK	CA	0.280	19.1	1.492
YVRE-A	1190	BARINAS 1		VE	0.262	17.6	1.515
XE/A	1190	CD.SAUCILLO	CH	MX	0.241	15.9	1.534
KGBN	1190	ANAHEIM	CA	US	0.236	15.4	1.552

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XEWK/O	1190	GUADALAJARA	JA	MX	1.474
XEMBC1/O	1190	MEXICALI	BN	MX	1.073
XEVN/O	1190	NOGALES	SO	MX	0.456
KVCU	1190	BOULDER	CO	US	0.355
XEMBC/O	1190	MEXICALI	BN	MX	0.339
XEPZ/O	1190	CD.JUAREZ	CH	MX	0.331
XEXQ/O	1190	SAN LUIS POTOSI	SL	MX	0.320
HJCT-B	1190	BARRANQUILLA		CO	0.314
XENVA2/O	1190	PIEDRAS NEGRAS	CI	MX	0.313
KVSV	1190	BELOIT	KS	US	0.270

## Station Information:

Call: WOAI  
 Freq: 1200 kHz  
 SAN ANTONIO, TX, US  
 Hours: U  
 Lat: 29-30-07 N  
 Lng: 098-07-43 W  
 Power: 50.0 kW  
 Theo RMS: 400.73 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
UNK-A	1200	RED GATE		CJ	1.687	100.0	1.687
HJBZ-A	1200	RIOHACHA		CO	1.523	90.3	2.273
HJLR-A	1200	SOGAMOSO 2		CO	1.316	57.9	2.626*
YVOZ-A	1200	CARACAS 7		VE	1.131	43.1	2.859
YVWH-A	1200	STA BARBARA		VE	1.014	35.5	3.034
4VRD-A	1200	PT DE PAIX		HA	0.603	19.9	3.093
ZYK-520-1200	1200	SAO PAULO		BR	0.587	19.0	3.148
HCRM5-A	1200	CUENCA 1		EC	0.573	18.2	3.200
HJIJ-A	1200	MEDELLIN 18		CO	0.492	15.4	3.238

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XENVA2/O	1200	MATAMOROS	TA	MX	6.177
XEAGA/O	1200	AGUASCALIENTES	AG	MX	3.746
XEHW1/O	1200	POZA RICA	VC	MX	3.243
XEITC/O	1200	CELAYA	GT	MX	3.104
YNRP1-B	1200	RADIO PANCAS		NU	3.081
XEZI/O	1200	ZACAPU	MC	MX	2.511
XE/O	1200	COSOLAPA	OA	MX	2.460
CMJQ-D	1200	PALMA SORIAN		CU	2.257
XE/O	1200	CHILAPA	GR	MX	2.214
XE/O	1200	COATZACOALCOS	VC	MX	2.205

# 1500 KSTP NIF (FCC) x

## Station Information:

Call: KSTP  
Freq: 1500 kHz  
ST. PAUL, MN, US  
Hours: N  
Lat: 45-01-32 N  
Lng: 093-03-06 W  
Power: 50.0 kW - Custom Q Value Used: 70.71  
Theo RMS: 2748.76 mV/m @ 1km @ 50.0 kW  
# of Augmentations: 6

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
WFED	1500	WASHINGTON	DC	US	1.432	100.0	1.432*
WLQV	1500	DETROIT	MI	US	0.470	32.9	1.507
OBX4I-A	1500	SANTA ROSA		PE	0.469	31.1	1.579
CA 150-A	1500	IQUIQUE 2		CI	0.383	24.3	1.624
HCHG2-A	1500	VINCES		EC	0.325	20.0	1.656
UNK-A	1500	ANGUILLA		AV	0.314	19.0	1.686
TILQA-A	1500	ALAJUELA 1		CS	0.271	16.1	1.708
KHKA	1500	HONOLULU	HI	US	0.223	13.0	1.722

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XEAI/O	1500	IZTAPALAPA	DF	MX	1.257
YNPT-B	1500	RADIO MINUTO		NU	0.840
PJC9-B	1500	R HOYER II		NA	0.647
KEYQ/O	1500	FRESNILLO	ZA	MX	0.509
WAKE	1500	VALPARAISO	IN	US	0.457
XEGN/O	1500	PIEDRAS NEGRAS	VC	MX	0.432
XEUV/O	1500	VILLAHERMOSA	TB	MX	0.395
CMKR-D	1500	HOLGUIN 1		CU	0.355
XE/O	1500	MELCHOR OCAMPO	MC	MX	0.353
YSDA-B	1500	SAN SALVADOR		ES	0.321

## Station Information:

Call: WFED  
 Freq: 1500 kHz  
 WASHINGTON, DC, US  
 Hours: N  
 Lat: 39-02-31 N  
 Lng: 077-02-47 W  
 Power: 50.0 kW - Custom Q Value Used: 70.71  
 Theo RMS: 2719.36 mV/m @ 1km @ 50.0 kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KSTP	1500	ST. PAUL	MN	US	1.450	100.0	1.450
UNK-A	1500	ANGUILLA		AV	0.856	59.0	1.684*
WLQV	1500	DETROIT	MI	US	0.773	45.9	1.853
OBX4I-A	1500	SANTA ROSA		PE	0.685	37.0	1.975
CA 150-A	1500	IQUIQUE 2		CI	0.553	28.0	2.051
4VBD-A	1500	CAP HAITIEN		HA	0.550	26.8	2.124
HCHG2-A	1500	VINCES		EC	0.506	23.8	2.183
TILQA-A	1500	ALAJUELA 1		CS	0.442	20.3	2.228
HJZH-A	1500	MEDELLIN 14		CO	0.388	17.4	2.261
HISD-C	1500	PUERTO PLATA		DR	0.378	16.7	2.293
WMNT	1500	MANATI	PR	US	0.359	15.7	2.321

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
PJC9-B	1500	R HOYER II		NA	1.488
YNPT-B	1500	RADIO MINUTO		NU	1.328
XEAII/O	1500	IZTAPALAPA	DF	MX	1.214
CMKR-D	1500	HOLGUIN 1		CU	0.894
CMEM-D	1500	SANTA CLARA		CU	0.506
XEUV/O	1500	VILLAHERMOSA	TB	MX	0.487
YSDA-B	1500	SAN SALVADOR		ES	0.470
XEGN/O	1500	PIEDRAS NEGRAS	VC	MX	0.466
HJMP-B	1500	AGUACHICA		CO	0.417

**Station Information:**

Call: WLAC

Freq: 1510 kHz

NASHVILLE, TN, US

Hours: N

Lat: 36-16-19 N

Lng: 086-45-28 W

Power: 50.0 kW - Custom Q Value Used: 77.95

Theo RMS: 2575.00 mV/m @ 1km @ 50.0 kW

# of Augmentations: 6

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
TGDX-A	1510	CENTROAMERIC	GT	0.758	100.0		0.758
HCVC3-A	1510	CARIAMANGA	EC	0.541	71.4		0.931
HCRC1-A	1510	QUITO	EC	0.503	54.0		1.058*
HCVC3-A	1510	LOJA 3	EC	0.445	42.0		1.148
HJLE-A	1510	ARMERO	CO	0.405	35.3		1.217
HCVL7-A	1510	L AGRIO	EC	0.353	29.0		1.267
HCRY6-A	1510	RUNACUNAPAC	EC	0.344	27.1		1.313
HCUI2-A	1510	GUAYAQUIL	EC	0.336	25.6		1.355
HCMC5-A	1510	VOZ DE LA JU	EC	0.329	24.3		1.395
HIJN-A	1510	DOMINGO	DR	0.308	22.1		1.428
WMEX	1510	BOSTON	MA	US	0.300	21.0	1.459

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMHM-D	1510	CAMAGUEY 1	CU		1.053
HOA 95-B	1510	RADIO X	PM		0.910
XEOF1/O	1510	CORTAZAR	GT	MX	0.861
XEOF/O	1510	CORTAZAR	GT	MX	0.795
XE/O	1510	SALINA CRUZ	OA	MX	0.757
XENVA2/O	1510	OJINAGA	CH	MX	0.734
CMCO-D	1510	SN ANTONIO B		CU	0.724
XE/O	1510	PANUCO	VC <sub>64</sub>	MX	0.700

**Station Information:**

Call: KOKC

Freq: 1520 kHz

OKLAHOMA CITY, OK, US

Hours: N

Lat: 35-20-00 N

Lng: 097-30-16 W

Power: 50.0 kW - Custom Q Value Used: 74.73

Theo RMS: 2629.67 mV/m @ 1km @ 50.0 kW

# of Augmentations: 16

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YNRU-A	1520	RADIO URANIA		NU	1.370	100.0	1.370
HRBN-A	1520	MARCALA		HO	0.724	52.9	1.549*
HCJJ2-A	1520	QUEVEDO		EC	0.552	35.6	1.645
TILX-A	1520	CARTAGO		CS	0.521	31.7	1.725
HJLQ-A	1520	BARRANQUILLA		CO	0.399	23.1	1.771
HJML-A	1520	SINCELEJO 3		CO	0.389	22.0	1.813
WBZW	1520	APOPKA	FL	US	0.364	20.1	1.849
HJMA-A	1520	JERICO		CO	0.357	19.3	1.883
KRHW	1520	SIKESTON		MO	0.340	18.1	1.914

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XEJCC1/O	1520	CD.JUAREZ	CH	MX	2.716
XENVA2/O	1520	REYNOSA	TA	MX	1.909
XEVUC/O	1520	VILLA UNION	CI	MX	1.793
XEART/O	1520	ZACATEPEC	ML	MX	1.620
XEGAJ/O	1520	GUADALAJARA	JA	MX	1.373
XECPGP/O	1520	MORELIA	MC	MX	1.258
XEYP/O	1520	EL LIMON	TA	MX	1.227
XEVO/O	1520	SAN RAFAEL	VC	MX	1.208

## Station Information:

Call: WWKB  
 Freq: 1520 kHz  
 BUFFALO, NY, US  
 Hours: U  
 Lat: 42-46-10 N  
 Lng: 078-50-34 W  
 Power: 50.0 kW  
 Theo RMS: 2776.12 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 15

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
YNRU-A	1520	RADIO URANIA		NU	0.777	100.0	0.777
KOLM	1520	ROCHESTER	MN	US	0.426	54.9	0.886*
HCJJ2-A	1520	QUEVEDO		EC	0.405	45.7	0.974
HRBN-A	1520	MARCALA		HO	0.369	37.9	1.042
HJLQ-A	1520	BARRANQUILLA		CO	0.339	32.5	1.095
TILX-A	1520	CARTAGO		CS	0.328	29.9	1.143
WMLM	1520	ST. LOUIS	MI	US	0.328	28.6	1.189
KOKC	1520	OKLAHOMA CITY	OK	US	0.322	27.0	1.232
HJML-A	1520	SINCELEJO	3		0.320	26.0	1.273
YVJC-A	1520	GUATIRE		VE	0.300	23.6	1.308
WNWT	1520	ROSSFORD	OH	US	0.292	22.3	1.340

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMJU-A	1520	PALMA SORIAN		CU	0.565
XEART/O	1520	ZACATEPEC	ML	MX	0.471
WRCI	1520	THREE RIVERS	MI	US	0.455
WQCT	1520	BRYAN	OH	US	0.436
HRFU-D	1520	S PEDRO SULA		HO	0.393
XE/O	1520	TENOSIQUE	TB	MX	0.370
XEVO/O	1520	SAN RAFAEL	VC	MX	0.354
XENVA2/O	1520	REYNOSA	TA	MX	0.347

## Station Information:

Call: KFBK

Freq: 1530 kHz

SACRAMENTO, CA, US

Hours: N

Lat: 38-50-54 N

Lng: 121-28-58 W

Power: 50.0 kW

Theo RMS: 3126.79 mV/m @ 1km @ 50.0 kW

# of Augmentations: 20

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
WCKY	1530	CINCINNATI	OH	US	0.335	100.0	0.335
HJOZ-A	1530	VPROZ DE PAD		CO	0.294	87.9	0.446
UNK-A	1530	KINGSTOWN		VC	0.251	56.3	0.512*
UNK-A	1530	SAN FELIX		VE	0.197	38.5	0.548
CP 137-A	1530	LA PAZ		BL	0.180	32.8	0.577
HCMC2-A	1530	LIBERTAD		EC	0.159	27.6	0.599
HCJY1-A	1530	UNO		EC	0.154	25.8	0.618
HCVP5-A	1530	LA VOZ DE PA		EC	0.151	24.5	0.636
HCCC5-A	1530	AZOGUES		EC	0.149	23.5	0.654
HJJB-A	1530	SEVILLA		CO	0.144	22.1	0.670

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
UNK-B	1530	GEORGETOWN		CJ	0.697
XEGQ/O	1530	LOS REYES	MC	MX	0.539
XE/O	1530	CHIHUAHUA	CH	MX	0.530
XEUR/O	1530	IZTACALCO	DF	MX	0.463
XESD1/O	1530	SILAO	GT	MX	0.389
XEZYB/O	1530	OAXACA	OA	MX	0.384
YNR9-B	1530	RELOJ NACION		NU	0.312
KZNX	1530	CREEDMOOR	TX	US	0.233
KQSC	1530	COLORADO SPRINGS	CO	US	0.210

## Station Information:

Call: WCKY

Freq: 1530 kHz

CINCINNATI, OH, US

Hours: N

Lat: 39-03-55 N

Lng: 084-36-27 W

Power: 50.0 kW - Custom Q Value Used: 76.7

Theo RMS: 2730.50 mV/m @ 1km @ 50.0 kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
UNK-A	1530	KINGSTOWN		VC	1.012	100.0	1.012
HJOZ-A	1530	VPROZ DE PAD		CO	0.931	92.1	1.375*
UNK-A	1530	SAN FELIX		VE	0.659	47.9	1.525
KFBK	1530	SACRAMENTO	CA	US	0.440	28.9	1.587
HJDN-A	1530	MEDELLIN 5		CO	0.366	23.1	1.629
HJGD-A	1530	CHIQUINQUIRA		CO	0.348	21.4	1.666
HJJB-A	1530	SEVILLA		CO	0.342	20.5	1.700
HJPE-A	1530	MELGAR		CO	0.335	19.7	1.733
CP 137-A	1530	LA PAZ		BL	0.310	17.9	1.761
HCJY1-A	1530	UNO		EC	0.304	17.3	1.787

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMIM-C	1530	MORON		CU	0.928
YNR9-B	1530	RELOJ NACION		NU	0.698
XEUR/O	1530	IZTACALCO	DF	MX	0.582
XEZYB/O	1530	OAXACA	OA	MX	0.557
XEGQ/O	1530	LOS REYES	MC	MX	0.509
UNK-B	1530	GEORGETOWN		CJ	0.478
XESD1/O	1530	SILAO	GT	MX	0.411
XE/O	1530	CHIHUAHUA	CH	MX	0.322
KDSN	1530	DENISON	IA	US	0.275
KZNX	1530	CREEDMOOR	TX	US	0.249

## Station Information:

Call: KXEL  
 Freq: 1540 kHz  
 WATERLOO, IA, US  
 Hours: N  
 Lat: 42-10-48 N  
 Lng: 092-18-38 W  
 Power: 50.0 kW  
 Theo RMS: 2735.88 mV/m @ 1km @ 50.0 kW  
 # of Augmentations: 10

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
ZNS-1-A	1540	NASSAU		BF	1.025	100.0	1.025
YNR10-A	1540	RELOJ NACION		NU	0.530	51.7	1.154*
KGBC	1540	GALVESTON	TX	US	0.510	44.2	1.262
XE/A	1540	COAHUAYANA	MC	MX	0.485	38.4	1.352
XEVF/A	1540	VILLA FLORES	CS	MX	0.479	35.4	1.434
XE/A	1540	COYUCA DE BENITEZ	GR	MX	0.428	29.8	1.497
HRYK-A	1540	TEGUCIGALPA		HO	0.418	27.9	1.554
XENC/A	1540	SANTA MARIA DEL R	GT	MX	0.409	26.3	1.607
XECAC/A	1540	CHETUMAL	QR	MX	0.377	23.4	1.651
HCHG3-A	1540	MACHALA 1		EC	0.376	22.8	1.693

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XEHOS1/01540	1540	VILLA DE SERIS	SO	MX	1.694
XEHOS/O	1540	LA PALOMA	SO	MX	1.504
XEHOS/O	1540	VILLA DE SERIS	SO	MX	1.071
XETAV/O	1540	VILLAHERMOSA	TB	MX	0.639
XENC/O	1540	CELAYA	GT	MX	0.558
XERTP/O	1540	SAN MARTIN TEXMEL	PU	MX	0.528
XE/O	1540	MATEHUALA	SL	MX	0.496
XE0064/01540	1540	FRESNILLO	ZA	MX	0.464

## Station Information:

Call: KNZR  
 Freq: 1560 kHz  
 BAKERSFIELD, CA, US  
 Hours: N  
 Lat: 35-18-30 N  
 Lng: 119-02-46 W  
 Power: 10.0 kW - Custom Q Value Used: 35.422  
 Theo RMS: 1231.15 mV/m @ 1km @ 10.0 kW  
 # of Augmentations: 8  
  
 Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
TIFQ-A	1560	GUANACASTE		CS	0.616	100.0	0.616
WFME	1560	NEW YORK	NY	US	0.479	77.7	0.781
HJGP-A	1560	TULUA 1		CO	0.407	52.1	0.880*
XEMAS/A	1560	SALAMANCA	GT	MX	0.365	41.5	0.953
YNACW-A	1560	ONDAS XOLOTL		NU	0.295	31.0	0.998
XEINFO/A	1560	SAN ANDRE DE LA C	MX	MX	0.292	29.3	1.040
XELAC/A	1560	LAZARO CARDENAS	MC	MX	0.276	26.6	1.076
HCCS2-A	1560	DAULE		EC	0.270	25.1	1.109
KEBC	1560	DEL CITY	OK	US	0.246	22.2	1.136
XENVA2/A	1560	VALLE HERMOSO	TA	MX	0.233	20.5	1.160

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
XENVA2/O	1560	SONOITA	SO	MX	3.333
XEJPV1/O	1560	ZARAGOZA	CH	MX	2.362
XEGYS/O	1560	GUAYMAS	SO	MX	1.720
XE/O	1560	GUASAVE	SI	MX	1.151
XERIO/O	1560	IXTLAN DEL RIO	NA	MX	0.930
XE/O	1560	CD.CUAUHTEMOC	CH	MX	0.800
XELAC1/O	1560	LAZARO CARDENAS	MC	MX	0.714
XEZW/O	1560	CERRITOS	SL	MX	0.533

## Station Information:

Call: WFME

Freq: 1560 kHz

NEW YORK, NY, US

Hours: N

Lat: 40-43-00 N

Lng: 073-55-04 W

Power: 50.0 kW - Custom Q Value Used: 79.166

Theo RMS: 2693.40 mV/m @ 1km @ 50.0 kW

# of Augmentations: 3

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
TIFQ-A	1560	GUANACASTE		CS	0.801	100.0	0.801
HJGP-A	1560	TULUA 1		CO	0.700	87.4	1.064*
WRSJ	1560	BAYAMON	PR	US	0.482	45.3	1.168
KTXZ	1560	WEST LAKE HILLS	TX	US	0.454	38.9	1.253
HJPZ-A	1560	CODAZZI 1		CO	0.395	31.5	1.314
YNACW-A	1560	ONDAS XOLOTL		NU	0.380	28.9	1.368
HCCS2-A	1560	DAULE		EC	0.359	26.2	1.414
HJHE-A	1560	MALAGA		CO	0.345	24.4	1.455
HJXZ-A	1560	MEDELLIN 5		CO	0.340	23.3	1.495
HCZD1-A	1560	URCUQUI		EC	0.330	22.1	1.531

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CMDR-C	1560	MATANZAS 1		CU	0.801
CMIR-C	1560	CIEGO DE AVI		CU	0.774
CMJM-C	1560	STGO DE CUBA		CU	0.490
WRSJ	1560	BAYAMON	PR	US	0.477
XEJPV1/O1560		ZARAGOZA	CH	MX	0.353
XEFAJ/O	1560	PETROLERA	DF	MX	0.302

**Station Information:**

**Call:** KYUK  
**Freq:** 640 kHz  
**BETHEL, AK, US**  
**Hours:** U  
**Lat:** 60-46-57 N  
**Lng:** 161-53-00 W  
**Power:** 10.0 kW  
**Theo RMS:** 282.00 mV/m @ 1km @ 1kW

**Standard:** FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KFI	0640	LOS ANGELES	CA	US	0.687	100.0	0.687*
NEW NELS	0640	NELSON	BC	CA	0.204	29.7	0.717
HCXY1-A	0640	QUITO 3		EC	0.174	24.3	0.737
CFMJ/A	0640	RICHMOND HILL	ON	CA	0.080	10.9	0.742

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
TGW-D	0640	VOZDEGUATEMA		GT	0.150

**Station Information:**

Call: KENI  
 Freq: 650 kHz  
 ANCHORAGE, AK, US  
 Hours: U  
 Lat: 61-09-58 N  
 Lng: 149-49-34 W  
 Power: 50.0 kW  
 Theo RMS: 308.19 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CISL/A	0650	RICHMOND	BC	CA	0.685	100.0	0.685
KPRP	0650	HONOLULU	HI	US	0.490	71.4	0.842*
CKOM/A	0650	SASKATOON	SK	CA	0.391	46.4	0.929
KSTE	0650	RANCHO CORDOVA	CA	US	0.295	31.7	0.974
WSM	0650	NASHVILLE	TN	US	0.104	10.6	0.980

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CISL/A	0650	RICHMOND	BC	CA	0.733
CX6-B	0650	MONTEVIDEO 1		UY	0.450
CINT/A	0650	SASKATOON	SK	CA	0.391
HRVW-B	0650	S PEDRO SULA		HO	0.119

**Station Information:**

**Call:** KFAR  
**Freq:** 660 kHz  
**FAIRBANKS, AK, US**  
**Hours:** U  
**Lat:** 64-48-29 N  
**Lng:** 147-29-34 W  
**Power:** 10.0 kW  
**Theo RMS:** 306.00 mV/m @ 1km @ 1kW

**Standard:** FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CFFR/A	0660	CALGARY	AB	CA	0.658	100.0	0.658
KTNN	0660	WINDOW ROCK	AZ	US	0.408	62.0	0.775*
NEW KAML	0660	KAMLOOPS	BC	CA	0.298	38.4	0.830
CB 66-A	0660	SANTIAGO 13		CI	0.249	30.0	0.866
KAPS	0660	MOUNT VERNON	WA	US	0.143	16.5	0.878
WFAN	0660	NEW YORK	NY	US	0.094	10.7	0.883

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)

**Station Information:**

Call: KDLG  
 Freq: 670 kHz  
 DILLINGHAM, AK, US  
 Hours: U  
 Lat: 59-02-43 N  
 Lng: 158-27-07 W  
 Power: 10.0 kW  
 Theo RMS: 304.17 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KBOI	0670	BOISE	ID	US	0.549	100.0	0.549
KPUA	0670	HILO	HI	US	0.458	83.3	0.715*
WSCR	0670	CHICAGO	IL	US	0.106	14.8	0.723
UNK-A	0670	PONTA PORA		BR	0.074	10.2	0.727

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
TGRT-B	0670	FABULOSA	GT		0.087
CMBC-D	0670	ARROYO ARENA	CU		0.080

**Station Information:**

**Call:** KBRW  
**Freq:** 680 kHz  
**BARROW, AK, US**  
**Hours:** N  
**Lat:** 71-15-24 N  
**Lng:** 156-31-32 W  
**Power:** 10.0 kW  
**Theo RMS:** 313.80 mV/m @ 1km @ 1kW

**Standard:** FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CHFA/A	0680	EDMONTON	AB	CA	0.407	100.0	0.407
KNBR	0680	SAN FRANCISCO	CA	US	0.240	58.9	0.473*
CJOB/	0680	WINNIPEG	MB	CA	0.224	47.4	0.523
WRKO	0680	BOSTON	MA	US	0.076	14.6	0.528
CC 68-A	0680	CONCEPCION		CI	0.067	12.7	0.533
LU12-A	0680	RIO GALLEGOS		AR	0.054	10.1	0.535

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)

## Station Information:

Call: KBYR  
 Freq: 700 kHz  
 ANCHORAGE, AK, US  
 Hours: U  
 Lat: 61-12-25 N  
 Lng: 149-55-20 W  
 Power: 10.0 kW  
 Theo RMS: 299.00 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CKRD/A	0700	RED DEER	AB	CA	0.438	100.0	0.438
CJLI/A	0700	CALGARY	AB	CA	0.397	90.7	0.591*
ZYK-686	0700	SAO PAULO		BR	0.167	28.3	0.614
KXLX	0700	AIRWAY HEIGHTS	WA	US	0.131	21.4	0.628
KGRV	0700	WINSTON	OR	US	0.128	20.4	0.641
KMBX	0700	SOLEDAD	CA	US	0.111	17.4	0.651
WLW	0700	CINCINNATI	OH	US	0.111	17.1	0.660
NEW KAML	0700	KAMLOOPS	BC	CA	0.092	13.9	0.666
CD70-A	0700	PUNTA ARENAS		CI	0.079	11.9	0.671
ZP 12-A	0700	PILAR		PA	0.070	10.4	0.675

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
C700/	0700	CALGARY	AB	CA	0.410
HJCX-B	0700	CALI 5		CO	0.173
TGHR-B	0700	MUNDIAL		GT	0.097
YVMH-B	0700	MARACAIBO 2		VE	0.085
YNSC-B	0700	R FABULOSO 7		NU	0.083

## Station Information:

Call: KOTZ  
 Freq: 720 kHz  
 KOTZEBUE, AK, US  
 Hours: U  
 Lat: 66-50-22 N  
 Lng: 162-34-05 W  
 Power: 10.0 kW  
 Theo RMS: 302.56 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
NEW KELO0720	KELOWNA		BC	CA	0.401	100.0	0.401
KQNG 0720	KEKAHA		HI	US	0.275	68.4	0.486*
KDWN 0720	LAS VEGAS		NV	US	0.210	43.1	0.530
831108/ 0720	PRINCE RUPERT		BC	CA	0.208	39.3	0.569
ZYK276-A0720	PT ALEGRE			BR	0.155	27.3	0.590
WGN 0720	CHICAGO		IL	US	0.107	18.1	0.600
NEW MEDI0720	MEDICINE HAT		AB	CA	0.092	15.3	0.607

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
KDWN 0720	LAS VEGAS		NV	US	0.210

## Station Information:

Call: KFQD  
 Freq: 750 kHz  
 ANCHORAGE, AK, US  
 Hours: N  
 Lat: 61-20-18 N  
 Lng: 150-02-03 W  
 Power: 50.0 kW  
 Theo RMS: 309.75 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KXTG	0750	PORTLAND	OR	US	1.014	100.0	1.014*
KOAL	0750	PRICE	UT	US	0.302	29.8	1.058
LRA7-A	0750	CORDOBA		AR	0.276	26.1	1.093
CJVR/A	0750	MELFORT	SK	CA	0.266	24.4	1.125
CJWW/U	0750	SASKATOON	SK	CA	0.266	23.7	1.157
KERR	0750	POLSON	MT	US	0.150	13.0	1.166

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
NEW SASK	0750	SASKATOON	SK	CA	0.441
CJWW/U	0750	SASKATOON	SK	CA	0.441
CJVR/A	0750	MELFORT	SK	CA	0.417
KOAL	0750	PRICE	UT	US	0.302
YNRS4-B	0750	RADIO SANDIN		NU	0.179

**Station Information:**

**Call:** KCHU  
**Freq:** 770 kHz  
**VALDEZ, AK, US**  
**Hours:** U  
**Lat:** 61-06-40 N  
**Lng:** 146-15-39 W  
**Power:** 9.7 kW  
**Theo RMS:** 293.00 mV/m @ 1km @ 1kW

**Standard:** FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CHQR/A	0770	CALGARY	AB	CA	1.059	100.0	1.059
KTTH	0770	SEATTLE	WA	US	0.822	77.6	1.341*
KKOB	0770	ALBUQUERQUE	NM	US	0.624	46.5	1.479
CX12-A	0770	MONTEVIDEO		UY	0.297	20.1	1.508

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)

**Station Information:**

**Call:** KNOM  
**Freq:** 780 kHz  
**NOME, AK, US**  
**Hours:** N  
**Lat:** 64-29-16 N  
**Lng:** 165-17-58 W  
**Power:** 14.0 kW  
**Theo RMS:** 290.00 mV/m @ 1km @ 1kW

**Standard:** FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KKOH	0780	RENO	NV	US	0.513	100.0	0.513*
CKOK/U	0780	PENTICTON	BC	CA	0.146	28.5	0.533
CD 78-A	0780	OSORNO		CI	0.114	21.4	0.545
WBBM	0780	CHICAGO	IL	US	0.094	17.3	0.553
LRA10-A	0780	USHUAIA		AR	0.090	16.2	0.560

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CKOK/A	0780	PENTICTON	BC	CA	0.146

## Station Information:

Call: KCBF  
 Freq: 820 kHz  
 FAIRBANKS, AK, US  
 Hours: U  
 Lat: 64-52-44 N  
 Lng: 147-40-06 W  
 Power: 10.0 kW  
 Theo RMS: 305.80 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KGNW	0820	BURIEN-SEATTLE	WA	US	0.270	100.0	0.270
WBAP	0820	FORT WORTH	TX	US	0.178	65.9	0.324
NEW PRIN	0820	PRINCE ALBERT	SK	CA	0.178	55.0	0.370*
HJED-A	0820	CALI 12		CO	0.084	22.8	0.379
CHAM/B	0820	HAMILTON	ON	CA	0.082	21.8	0.388
OAX4O-A	0820	LIBERTAD 1		PE	0.074	19.0	0.395
LU21-A	0820	CALETA OLIVI		AR	0.068	17.2	0.401
CA 82A-A	0820	LA SERENA 3		CI	0.062	15.5	0.406
NEW DRUM	0820	DRUMMONDVILLE	QC	CA	0.054	13.3	0.409
CB 82-A	0820	ISLA DE PASC		CI	0.047	11.5	0.412
NEW HALI	0820	HALIFAX	NS	CA	0.044	10.8	0.414
WBKK	0820	WILTON	MN	US	0.044	10.7	0.417
LRA8-A	0820	FORMOSA		AR	0.043	10.3	0.419

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
TGTO-B	0820	INTERNACIONA		GT	0.053
XEVMS/O	0820	MEXICALI	BN	MX	0.044

## Station Information:

Call: KICY  
 Freq: 850 kHz  
 NOME, AK, US  
 Hours: N  
 Lat: 64-29-15 N  
 Lng: 165-18-53 W  
 Power: 50.0 kW  
 Theo RMS: 299.00 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CFSR/A	0850	ABBOTSFORD	BC	CA	0.386	100.0	0.386
KHLO	0850	HILO	HI	US	0.283	73.3	0.479*
CKRD/	0850	RED DEER	AB	CA	0.238	49.6	0.535
CX16-A	0850	MONTEVIDEO 1		UY	0.205	38.3	0.573
KOA	0850	DENVER	CO	US	0.130	22.6	0.587
OAX4A-A	0850	NACIONAL 2		PE	0.116	19.7	0.598
KHHO	0850	TACOMA	WA	US	0.109	18.2	0.608
CKBA/A	0850	ATHABASCA	AB	CA	0.106	17.4	0.617

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CKBA/A	0850	ATHABASCA	AB	CA	0.106

## Station Information:

Call: KBBI  
 Freq: 890 kHz  
 HOMER, AK, US  
 Hours: U  
 Lat: 59-40-14 N  
 Lng: 151-26-38 W  
 Power: 10.0 kW  
 Theo RMS: 305.71 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
CJDC/A	0890	DAWSON CREEK	BC	CA	0.871	100.0	0.871*
KDXU	0890	ST. GEORGE	UT	US	0.369	42.4	0.946
NEW REED	0890	REEDSPORT	OR	US	0.284	30.0	0.988
NEW SWIF	0890	SWIFT CURRENT	SK	CA	0.224	22.7	1.013
NEW ANAC	0890	ANACONDA	MT	US	0.222	21.9	1.037
NEW TRAI	0890	TRAIL	BC	CA	0.221	21.3	1.060
KIHC	0890	ARROYO GRANDE	CA	US	0.192	18.1	1.078
CD 89-A	0890	PUNTA ARENAS		CI	0.166	15.4	1.090
WLS	0890	CHICAGO	IL	US	0.144	13.2	1.100

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
NEW SWIF	0890	SWIFT CURRENT	SK	CA	0.224

## Station Information:

Call: KVNT  
 Freq: 1020 kHz  
 EAGLE RIVER, AK, US  
 Hours: N  
 Lat: 61-29-07 N  
 Lng: 149-45-50 W  
 Power: 10.0 kW - Custom Q Value Used: 31.62  
 Theo RMS: 997.53 mV/m @ 1km @ 10.0 kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KCKN	1020	ROSWELL	NM	US	0.588	100.0	0.588
NEW TERRI	1020	TERRACE	BC	CA	0.520	88.4	0.785*
NEW REGI	1020	REGINA	SK	CA	0.279	35.5	0.833
KWIQ	1020	MOSES LAKE NORTH	WA	US	0.211	25.3	0.859
KTNQ	1020	LOS ANGELES	CA	US	0.148	17.3	0.872
CKVH/A	1020	HIGH PRAIRIE	AB	CA	0.128	14.7	0.881
KDKA	1020	PITTSBURGH	PA	US	0.116	13.2	0.889
KDYK	1020	UNION GAP	WA	US	0.097	10.9	0.894

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CKVH/A	1020	HIGH PRAIRIE	AB	CA	0.128

## Station Information:

Call: KOAN  
 Freq: 1080 kHz  
 ANCHORAGE, AK, US  
 Hours: U  
 Lat: 61-07-12 N  
 Lng: 149-53-43 W  
 Power: 10.0 kW  
 Theo RMS: 337.20 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

## Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KFXX	1080	PORTLAND	OR	US	0.897	100.0	0.897
CKSA/A	1080	LLOYDMINSTER	AB	CA	0.588	65.6	1.072
CKKY/A	1080	WAINWRIGHT	AB	CA	0.556	51.9	1.208*
KWAI	1080	HONOLULU	HI	US	0.397	32.8	1.271
KVNI	1080	COEUR D'ALENE	ID	US	0.297	23.4	1.305
KRLD	1080	DALLAS	TX	US	0.290	22.2	1.337

\*50% Exclusion RSS

## Non-Contributors:

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
KWAI	1080	HONOLULU	HI	US	0.422

**Station Information:**

**Call:** KJNP  
**Freq:** 1170 kHz  
**NORTH POLE, AK, US**  
**Hours:** N  
**Lat:** 64-45-34 N  
**Lng:** 147-19-26 W  
**Power:** 21.0 kW  
**Theo RMS:** 381.41 mV/m @ 1km @ 1kW

**Standard:** FCC Rules (1992 Skywave Propagation Model) [ 10% ]

**Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)	(%)	RSS Limit (mV/m)
KPUG	1170	BELLINGHAM	WA	US	0.567	100.0	0.567
CKGY/A	1170	RED DEER	AB	CA	0.541	95.4	0.784*
KLOK	1170	SAN JOSE	CA	US	0.145	18.5	0.797
KFAQ	1170	TULSA	OK	US	0.131	16.4	0.808

\*50% Exclusion RSS

**Non-Contributors:**

Call	Freq (kHz)	City	St	Ct	Limit (mV/m)
CKGY/A	1170	RED DEER	AB	CA	0.627
KLOK	1170	SAN JOSE	CA	US	0.178

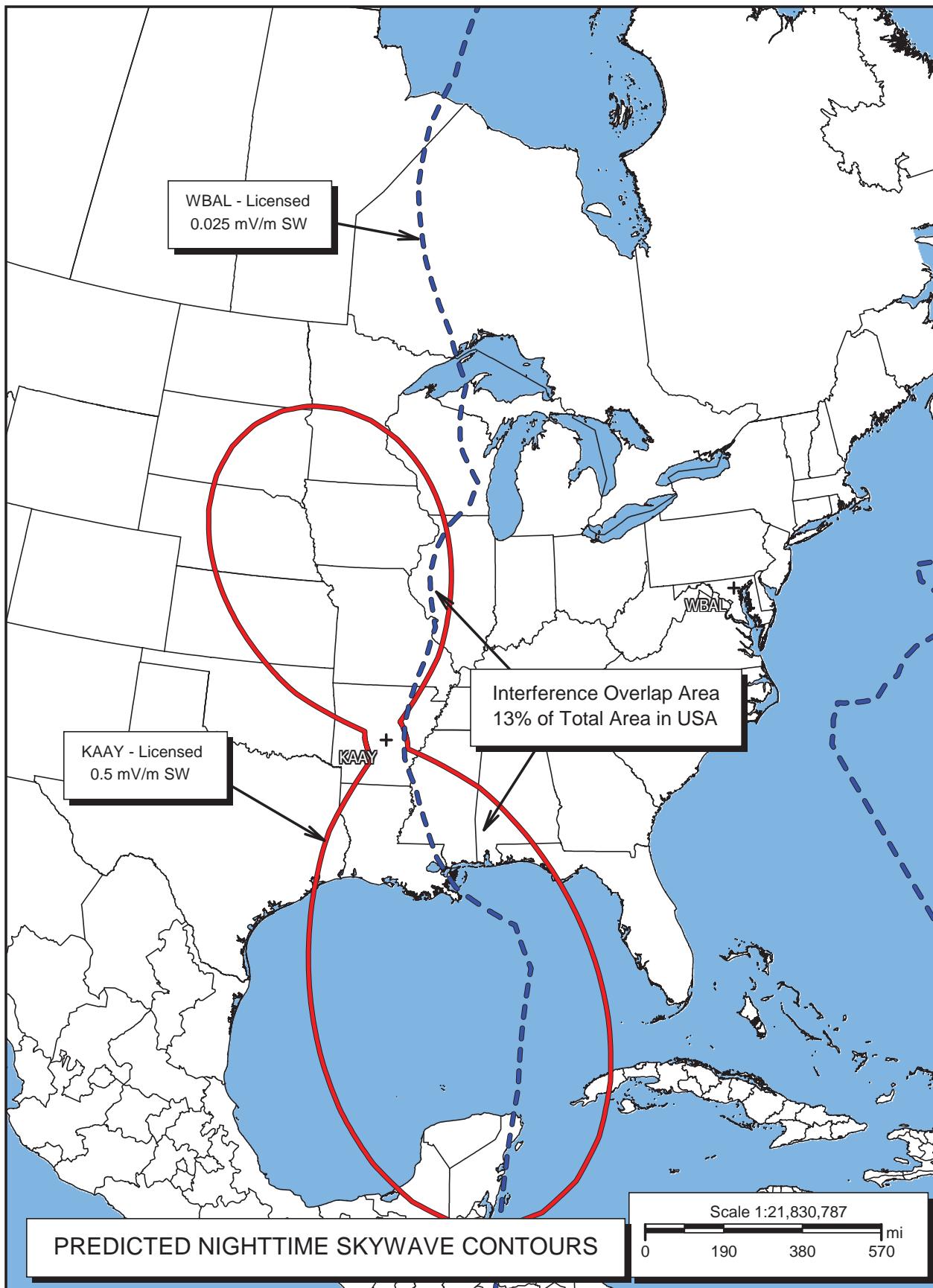
## **ATTACHMENT 4**

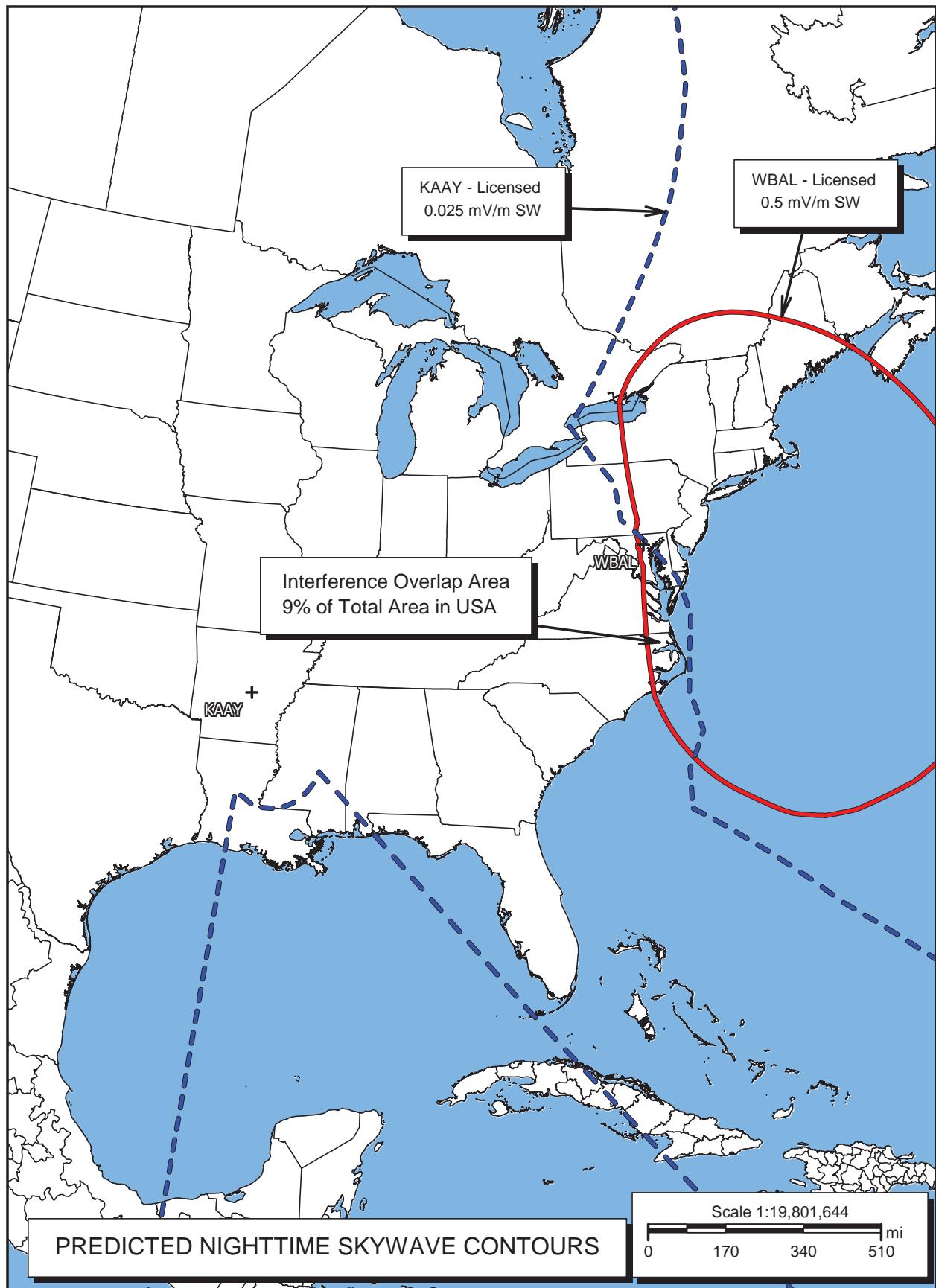
The following pages show the extent of 0.025 mV/m 10% of time skywave overlap that is received within the 0.5 mV/m 50% of time skywave coverage areas of Class A stations KGO, San Francisco, California; KRLD, Dallas, Texas; WTIC, Hartford, Connecticut; KAAY, Little Rock, Arkansas; WBAL, Baltimore, Maryland; KSTP, St. Paul, Minnesota and WFED, Washington, DC from other domestic Class A stations. The propagation model prescribed in the FCC rules for all station classes was used for the calculations.

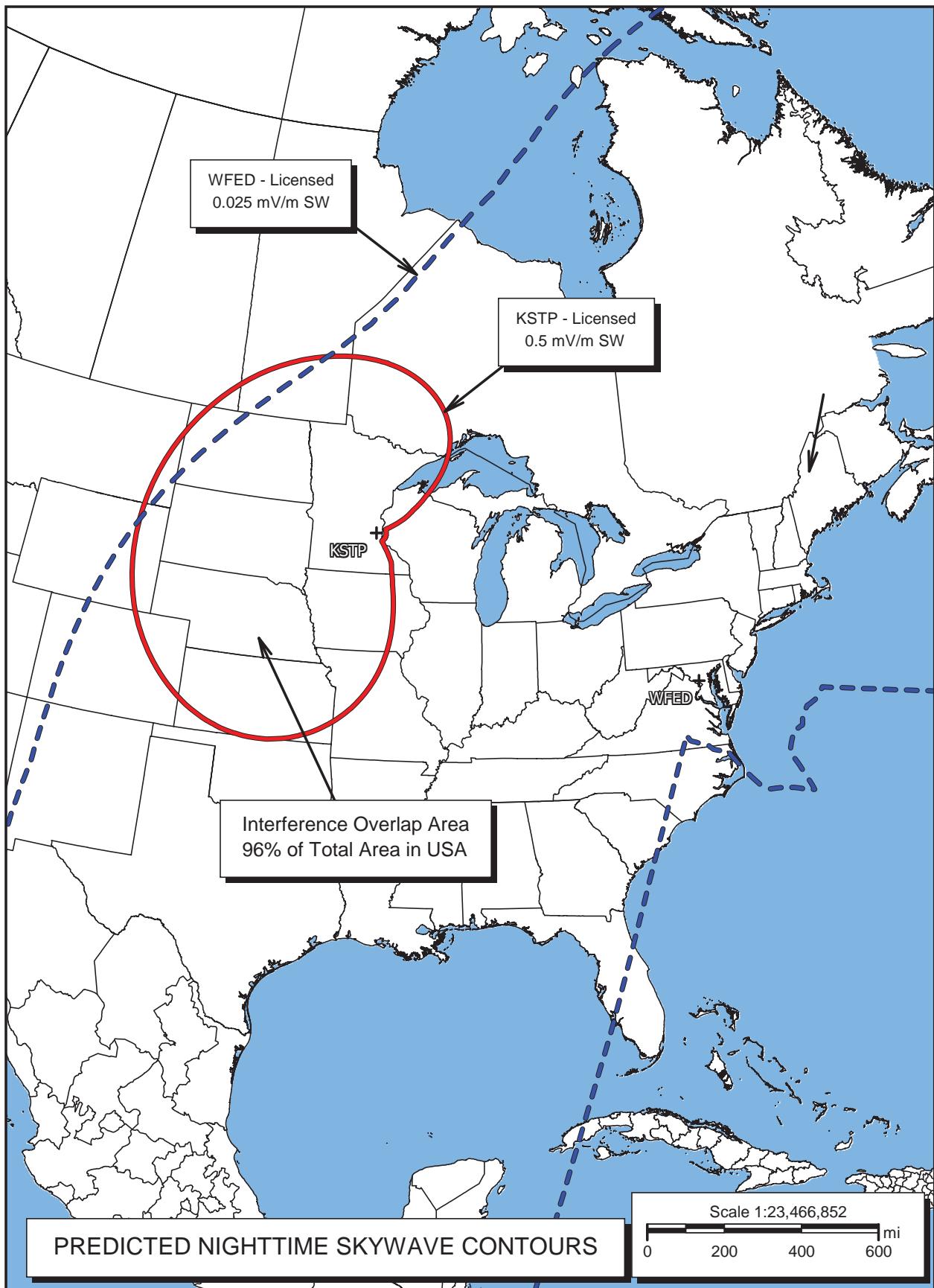














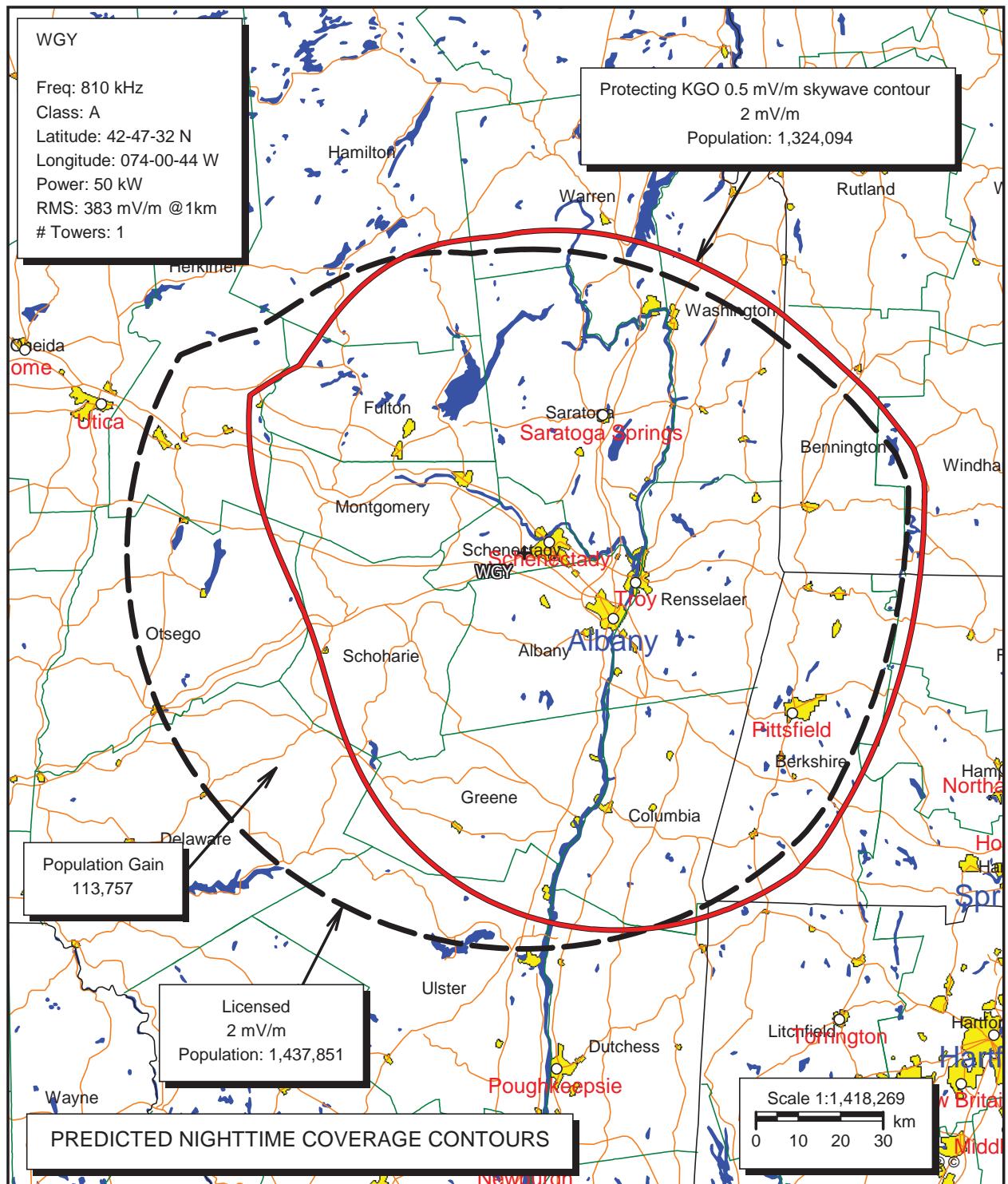
## ATTACHMENT 5

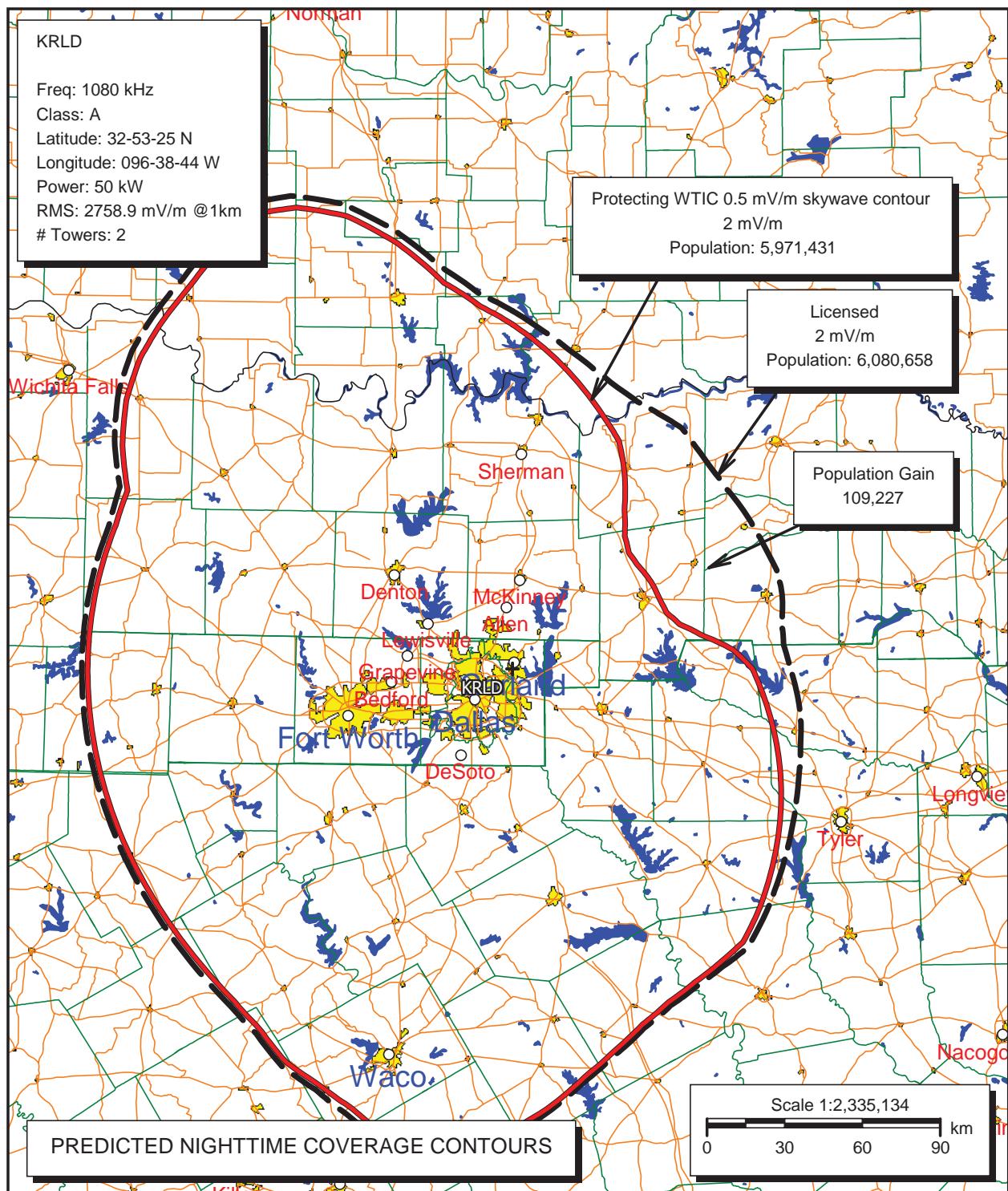
The following pages show the extent of 2.0 mV/m groundwave coverage improvement that is realized by stations WGY, Schenectady, New York; KRLD, Dallas, Texas; WTIC, Hartford, Connecticut; KAAY, Little Rock, Arkansas; WBAL, Baltimore, Maryland; KSTP, St. Paul, Minnesota and WFED, Washington, DC while, as a consequence, they cause 0.025 mV/m 10% of time skywave overlap within the 0.5 mV/m skywave contours of co-channel Class A stations. The 2.0 mV/m contour is the level specified for service to urbanized areas and communities of over 2,500 population. Being groundwave service, it is present 100% of the time - unlike what is the case for skywave signals.

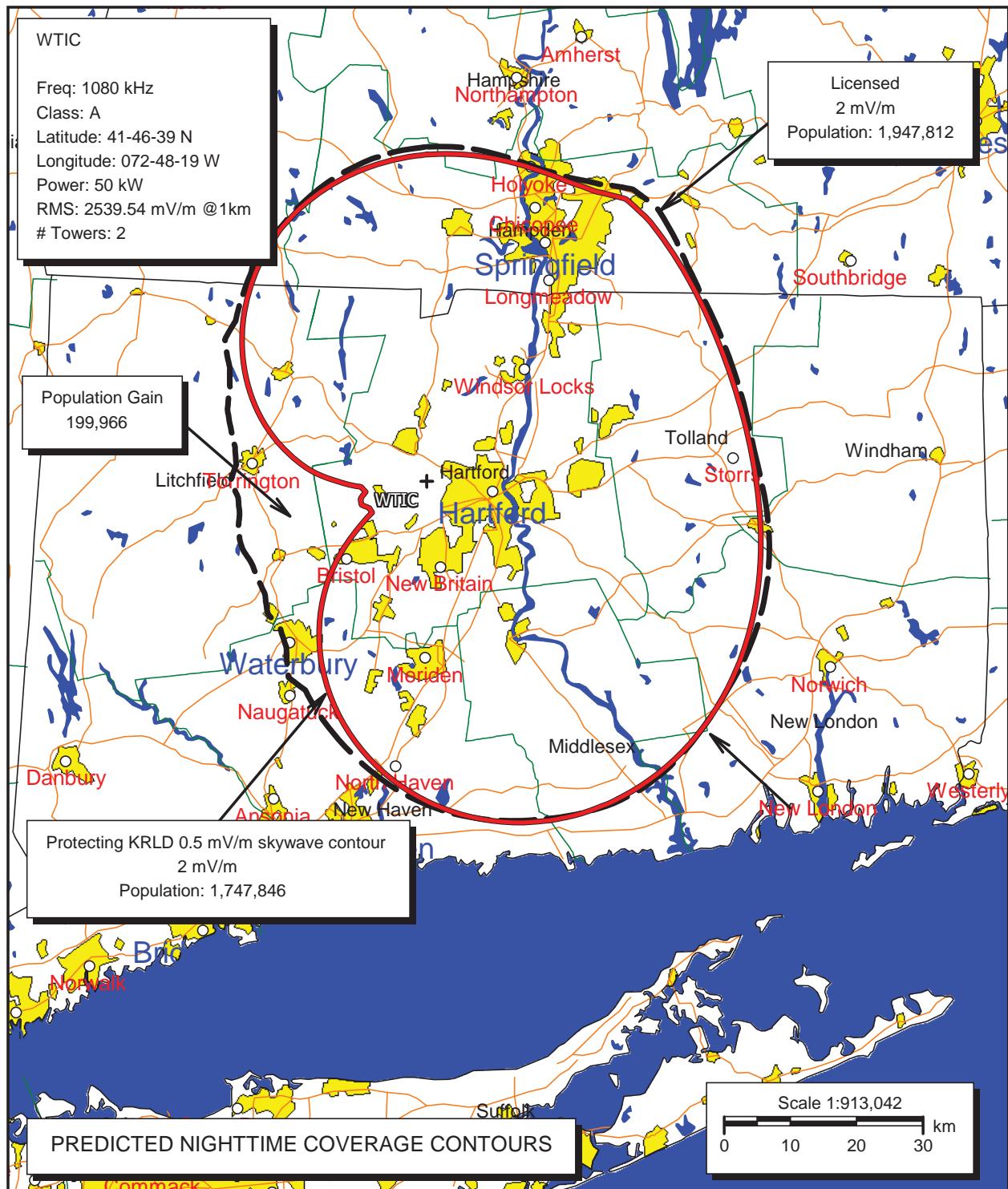
The coverage comparison was based on the licensed antenna and an assumed directional antenna pattern that would provide full protection from overlap of the 0.5 mV/m skywave coverage area of the co-channel Class A station in each case. For KAAY, WBAL, KSTP and WFED, alternate parameters using the existing three-tower array of each station were assumed for protection. For KRLD and WTIC, hypothetical three tower arrays at the licensed two-tower transmitter site coordinates were assumed to provide protection. For WGY, which operates nondirectionally, a hypothetical two-tower directional antenna will a null sufficiently deep to provide protection was assumed at the licensed transmitter site. The propagation model prescribed in the FCC rules for all station classes was used for the calculations.

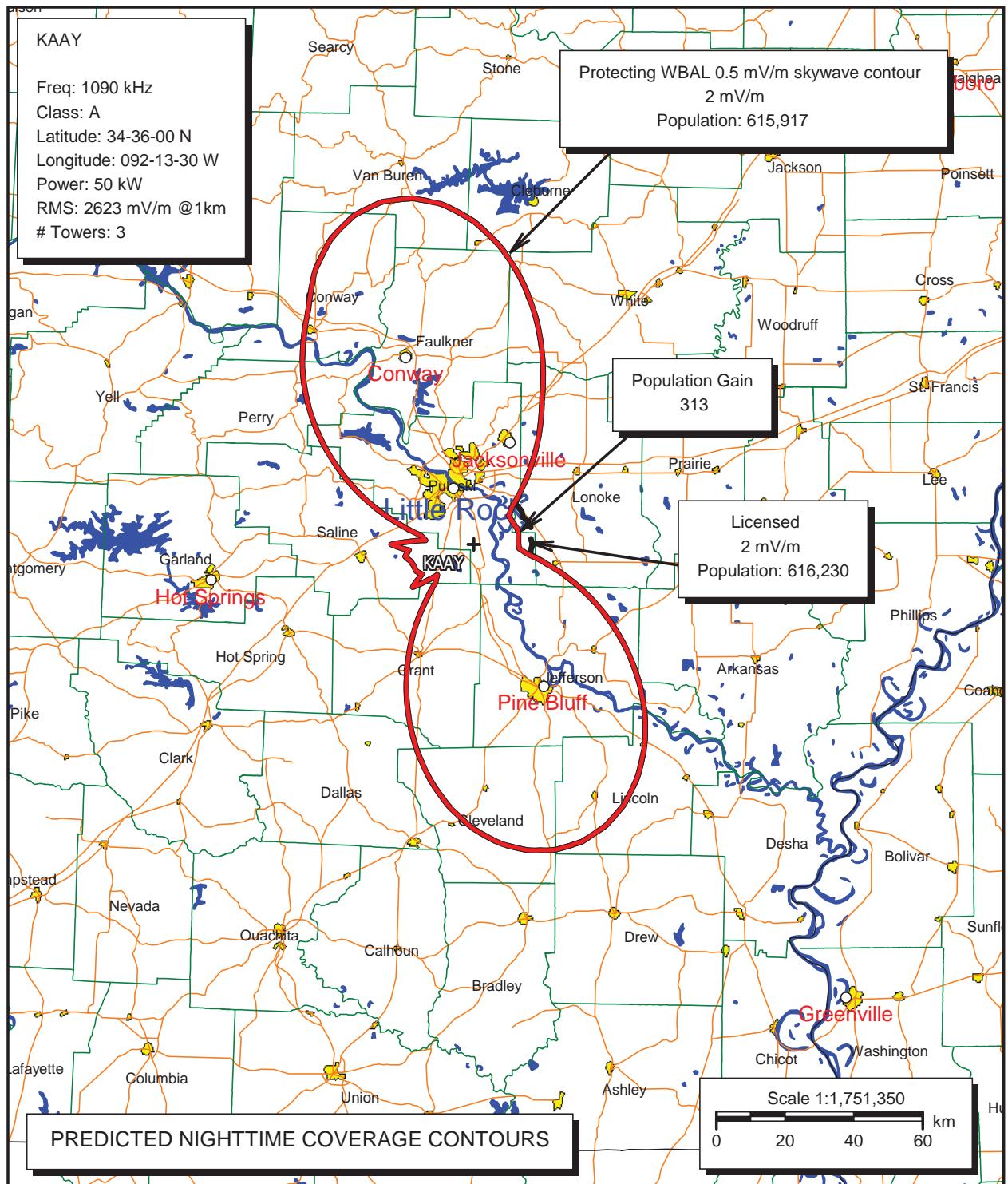
Over 700,000 people receive 2.0 mV/m groundwave service in the United States from Class A stations licensed in their local markets at night, in exchange for 0.025 mV/m 10% of time signal overlap with the distant 0.5 mV/m 50% of time skywave contours of other Class A stations:

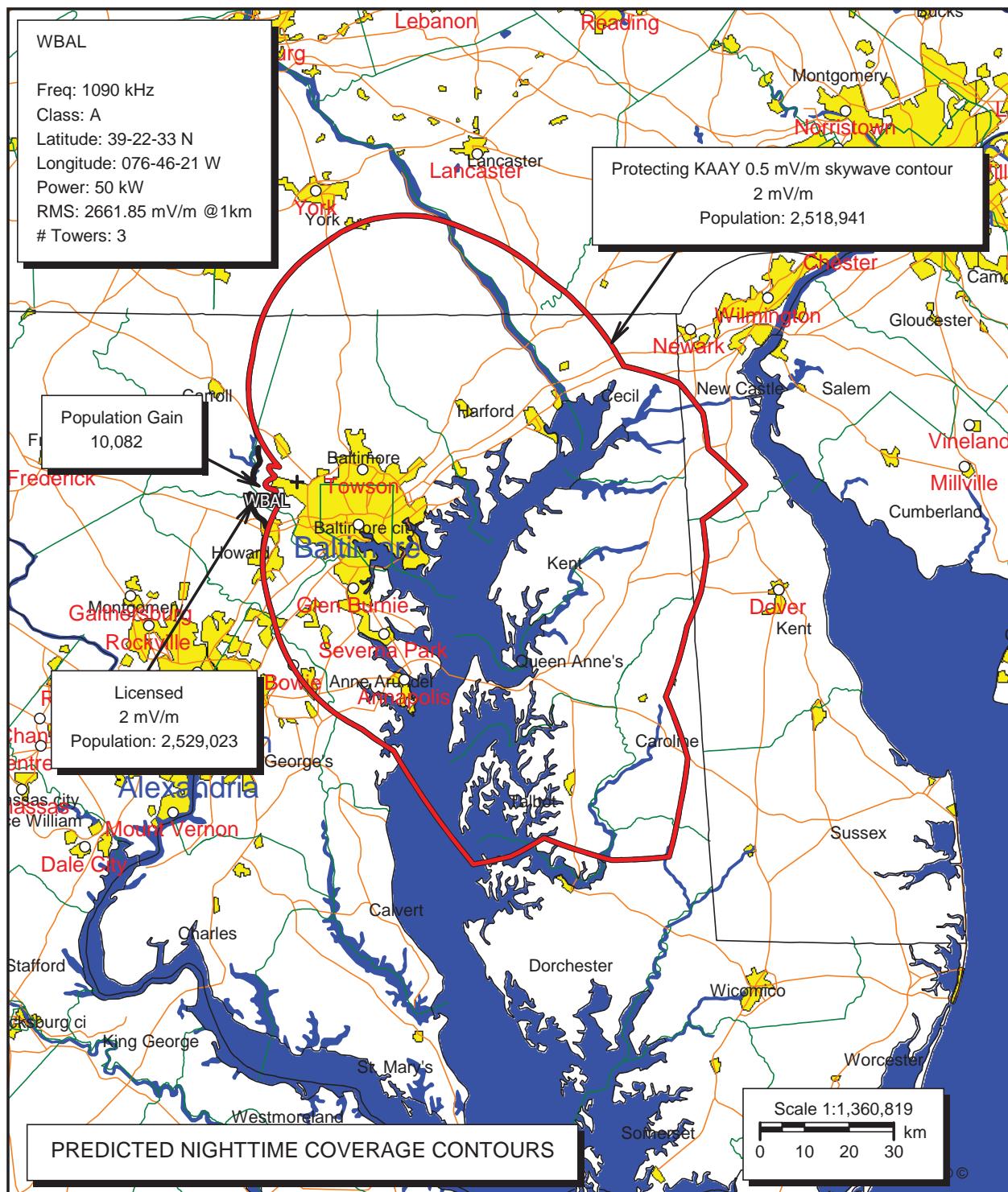
Station	City of License	Population in 2.0 mV/m Gain Area
WGY	Schenectady, NY	113,757
KRLD	Dallas, TX	109,227
WTIC	Hartford, CT	199,966
KAAY	Little Rock, AR	313
WBAL	Baltimore, MD	10,082
KSTP	St. Paul, MN	88,419
WFED	Washington, DC	179,353
Total		701,117

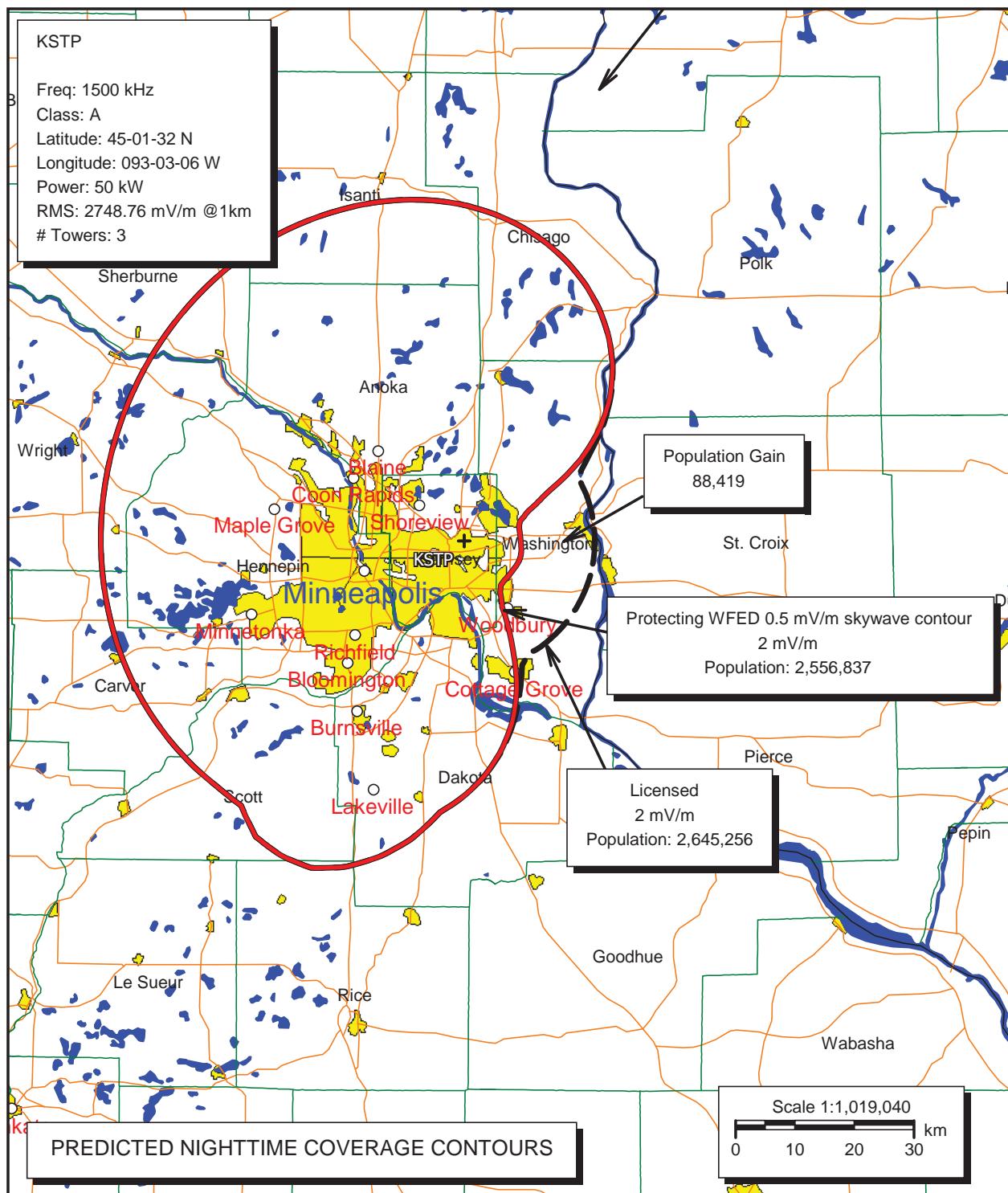


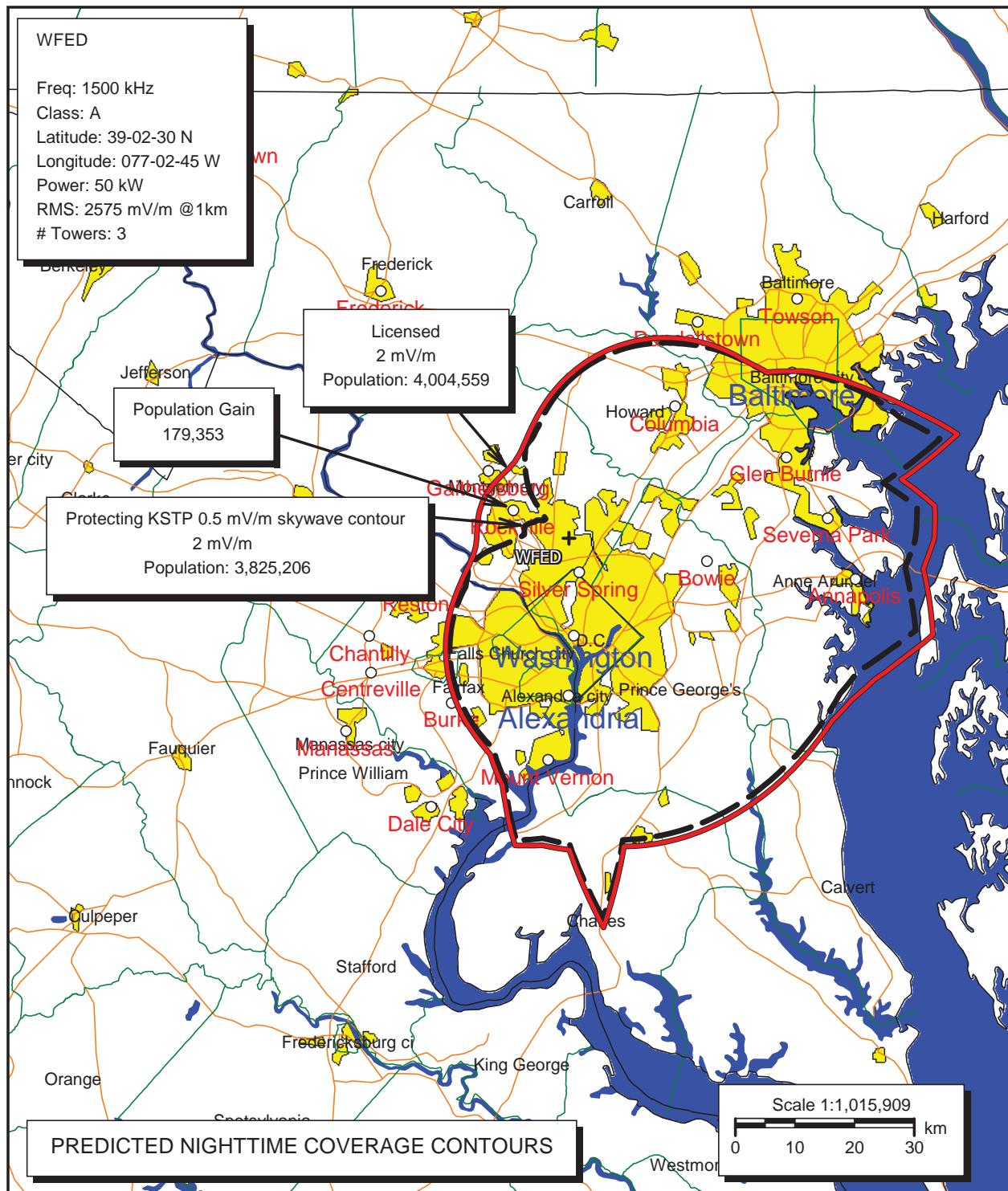












## **ATTACHMENT 6**

The proposed critical hours interpolation factors are shown on the following tabulation. They are to be applied to the radiation values shown on 73.190 Figures 9, 10, and 11, as appropriate for the frequency. Figures 9, 10 and 11 of 73.190 will have their distance scales modified to be for "Distance from Transmitter Site..." instead of "Distance from 0.1 mV/m Contour..."

## (c) Interpolation factors.

(1) Frequencies below 1000 kHz.			(2) Frequencies above 1000 kHz.		
	kHz	K(500) K(1000)		kHz	K(1000) K(1600)
	640	3.600 1.400		1010	4.915 0.085
	650	3.500 1.500		1020	4.835 0.165
	660	3.400 1.600		1030	4.750 0.250
	670	3.300 1.700		1040	4.665 0.335
	680	3.200 1.800		1050	4.585 0.415
	690	3.100 1.900		1060	4.500 0.500
	700	3.000 2.000		1070	4.415 0.585
	710	2.900 2.100		1080	4.335 0.665
	720	2.800 2.200		1090	4.250 0.750
	730	2.700 2.300		1100	4.165 0.835
	740	2.600 2.400		1110	4.085 0.915
	750	2.500 2.500		1120	4.000 1.000
	760	2.400 2.600		1130	3.915 1.085
	770	2.300 2.700		1140	3.835 1.165
	780	2.200 2.800		1160	3.665 1.335
	800	2.000 3.000		1170	3.585 1.415
	810	1.900 3.100		1180	3.500 1.500
	820	1.800 3.200		1190	3.415 1.585
	830	1.700 3.300		1200	3.335 1.665
	840	1.600 3.400		1210	3.250 1.750
	850	1.500 3.500		1220	3.165 1.835
	860	1.400 3.600		1500	0.835 4.165
	870	1.300 3.700		1510	0.750 4.250
	880	1.200 3.800		1520	0.665 4.335
	890	1.100 3.900		1530	0.585 4.415
	900	1.000 4.000		1540	0.500 4.500
	940	0.600 4.400		1550	0.415 4.585
	990	0.100 4.900		1560	0.335 4.665
				1570	0.250 4.750
				1580	0.165 4.835